SWITCHING INDUSTRIES: CAREER ADVANCEMENT TIPS FOR CIOs Page 32

CIO

BUSINESS TECHNOLOGY LEADERSHIP

WHEN FAILURE IS NOT AN OPTION

A.G. Edwards' 8-Step Framework for Project Success

Page 54

BY MERIDITH LEVINSON

A.G. Edwards CIO **John Parker:** "Projects will always flame out if your leaders aren't flying air-cover for them when they get into trouble."

CALL CENTER SMARTS

New technologies plus new strategies equal new value for the enterprise

Page 74

HOW TO BLOG

Everybody's doing it, but not everyone's doing it right

Page 66

JUNE 1, 2006 | $9.00 | CIO.COM

Your potential. Our passion.™
Microsoft

A Global Hotel Company Analyzing 1.4 Million Records a Day.
Running On Microsoft SQL Server 2005.

A Global Hotel Company Analyzing 1.4 Million Records a Day.
Running On Microsoft SQL Server 2005.

How does Hilton forecast demand for its 370,000 rooms and its catering services? They import data from six systems into one data warehouse requiring 7 million rows, and running on SQL Server™ 2005 with 99.98% uptime.* See how at **microsoft.com/bigdata**

Microsoft SQL Server 2005

*Results not typical, and are based on use with Windows Server™ 2003 Enterprise Edition. Availability is dependent on many factors, including hardware and software technologies, mission-critical operational processes, and professional services. © 2006 Microsoft Corporation. All rights reserved. Microsoft, Windows Server, and "Your potential. Our passion." are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

contents

JUNE 1, 2006 | VOL/19 | NO/16

CIO **David Barbieri** (above) says voice recognition technology has made calling Red Lion Hotels much easier for customers. 74

46 | A Job for Uncle Sam

CYBERSECURITY A former commissioner of the FTC weighs in on the need for a national disclosure law and stiffer FTC penalties for companies that fail to protect consumer data. **By Sarah D. Scalet**

54 | When Failure Is Not an Option

COVER STORY | PROJECT MANAGEMENT Five years ago, almost half of A.G. Edwards' IT projects were late and over budget. Now it boasts an 88 percent project success rate. How did it do that? By galvanizing IT, reinventing its PMO and relying on a standard framework to track projects and create accountability. **By Meridith Levinson**

66 | Welcome to My Blog

ADVANCED COMMUNICATIONS Blogging isn't the same as writing a memo or a message in the corporate newsletter. And while it may not be as revolutionary as some make it out to be, there's real value there. Here's how to get started and how to do it right. **By Michael Fitzgerald**

74 | Answering the Call

MID-MARKET | CUSTOMER SERVICE Everyone's had a bad experience with a call center. But now companies are investing in advanced technologies and at-home agents to connect with customers, not put them on hold.
By Susannah Patton

Columns

32 | Hitting to All Fields

CAREER How to break into a new industry and out of an old one without striking out. **By Martha Heller**

38 | IT's Good News

LEADERSHIP CIOs need to help their staffers understand that if they can hold on during the tough times, there's a payoff just around the corner.
By Susan Cramm

42 | Risk, Ahoy!

RISK MANAGEMENT It may be time for Uncle Sam to step in and help manage corporate risk from global disasters, but that doesn't mean CIOs don't have a job to do in the meantime.
By Barry C. Lynn

more »

38

COVER PHOTO BY KEVIN MIYAZAKI

The Adaptive Network

Designed to flex in completely new ways

ProCurve's strength is our flexibility. Our Adaptive EDGE Architecture™ distributes intelligence from the core to the edge, enabling secure, mobile and converged networks that adapt rapidly and cost-effectively to your changing business needs. Add to the equation our leading position in defining industry standards, our lifetime product warranty* and our 25 years of innovation, and you have a sound case for making ProCurve the foundation of your network.

To find out how ProCurve Networking by HP can improve your network, go to www.hp.com/learn/procurve or call (800) 975-7684, Ref. Code Learn.

ProCurve Networking
HP Innovation

hp invent

*Lifetime warranty applies to all ProCurve products, excluding the 9300m and 9400sl series routing switches, 8100fl series interconnect fabric switches and Secure Access 700wl Series, which have a one-year warranty with extensions available.
© 2006 Hewlett-Packard Development Company, L.P. Photo: Alan Karchmer.

IS YOUR BUSINESS TRAPPED UNDER THE WEIGHT
OF A BLOATED, BUREAUCRATIC GLOBAL IP PROVIDER?

THERE IS AN ALTERNATIVE

Your global IP carrier should set you free, not hold you down. It should be nimble and flexible enough to deliver innovative IP solutions and superior support yet expansive enough to offer the global scope and scale your business requires. Enter Global Crossing. Our wholly-owned global IP network connects you virtually anywhere instantly. It works effortlessly with your current legacy system and with IP services yet to be envisioned. All with the security, support and control you'd expect from an industry leader. It's no wonder so many FORTUNE 500® companies depend on us. Learn more at www.globalcrossing.com

Global Crossing®

One planet. One network.™ Infinite possibilities.

contents (Cont.)

In Every Issue

10 | From the Editor
A leader's most important job is making sure he can draw on his inner resources to lead. And that means taking care of yourself.
By David Rosenbaum

12 | From the Publisher
Moving money into capital investment is key to gaining competitive advantage. **By Gary Beach**

16 | Inbox
Readers weigh in on telecom contracts and toxic leaders.

21 | Trendlines
- If Your Suppliers Get the Flu
- World Cup's Not-So-Smart Tickets
- Online Banking's Boo-Boo
- Security Is in Employees' Hands
- IT Skills Gap
- Iceland Isn't an Island Online
- New CIOs in Insurance
- David McCullough on Leadership

82 | Forum
The CIO Executive Council shares strategies, tips and insights on making IT portfolio management a reality.
By Sari Kalin

86 | Index

88 | Endlines
Pop Quiz for Concerned Polluters
By Scott Berinato

CIO Online

BEST WEBSITE 2006
JESSE H. NEAL NATIONAL BUSINESS JOURNALISM AWARD

[THE LATEST SPECIAL REPORT]

The ABCs of Outsourcing

At its most basic, outsourcing is farming out services to a third party. But nothing in IT is that simple. This special report explains it all—from the business case to the hidden costs, from negotiating to pulling the plug—with the insight, clarity and authority you expect from *CIO*. Our ABCs series is a great tool to educate your business colleagues too. Additional topics include E-Commerce, CRM, ERP, Knowledge Management, Supply Chain Management and Wireless. **» www.cio.com/specialreports**

[PODCASTS]

DON'T LET THE DOG BITE

If your employees sense fear and indecision, they will question your management decisions. Executive coach John Baldoni offers tips for projecting confidence to your employees.

www.cio.com/podcasts/coach_casting.html

LEADERSHIP LESSONS FROM 1776

Historian and best-selling author David McCullough on what business leaders can learn from our founding fathers about the character, qualities and necessities of leadership. An interview by *CIO* Managing Editor David Rosenbaum.

www.cio.com/podcasts/leadership.html

David McCullough

[CONFERENCE]

CIO LEADERSHIP

David McCullough was just one of many great speakers at the CIO Leadership Conference. For more podcasts and our conference blog, go to **www.cio.com/leadership/conference2006**.

Right now @ www.cio.com

- **» Blogs:** CIO editors' insights and analysis
- **» Tech Informer:** The latest product updates
- **» Microsoft Informer:** What's Redmond up to now?
- **» CIO News Alerts:** Business and technology news you need to know

With Sybase® software, the PRC Ministry of Railways developed an innovative ticket sales and reservation system that:

- ☑ **Processes passenger traffic of more than one billion people a year**
- ☑ **Handles up to 5,000 ticket requests simultaneously**
- ☑ **Captures and analyzes passenger data on national, regional and local levels**

Replacing an outdated, paper-based ticketing system that supports one of the largest railway networks in the world is a monumental task. That's why, when the People's Republic of China (PRC) Ministry of Railways wanted the right technology partner, they chose Sybase. Using Sybase Adaptive Server® Enterprise, Sybase® IQ, and Replication Server® software, the PRC created an information edge that enables passengers to purchase round-trip or one-way tickets from 24 regional ticket centers, 510 booking systems and over 5,000 counter terminals. That means customers are happier. Employee productivity is up. And trains are filled with people ... and profits. **www.sybase.com/infoedge107**

Copyright ©2006 Sybase, Inc. All rights reserved. Sybase, the Sybase logo, Adaptive Server and Replication Server are trademarks of Sybase, Inc.
® indicates registration in the United States of America. All product and company names are trademarks of their respective owners.

SYBASE®

No Time for Martyrs

A leader's most important job is making sure he can draw on his inner resources to lead. And that means taking care of yourself.

Lately, I've been feeling lousy. Maybe it's the change of season; maybe it's allergies; maybe it's germs. Whatever it is, for the past two weeks my head's been aching, my nose has been running, my eyes have been burning, and I've been looking even more pathetic than I normally do.

The doc put me on antibiotics and told me to take antihistamines, drink lots of water and take it easy.

But I haven't been taking it easy. Most days, I've been dragging my sorry butt into work. There's a lot going on right now at *CIO*. We're deploying a new content management system. We're building a new Web architecture and redefining our online coverage to make our award-winning website* even better. We're reengineering our internal work processes to make our site and our magazine more timely. And I figured that without my physical presence, without my sterling, hands-on leadership, the whole kit and caboodle would go to hell in a handbasket. So I showed up to work and led the troops with my noggin noddin' and my rheumy eyes half-closed. I deferred decisions and radiated martyred misery. I led with a whisper, a whine, a sneeze and a sniffle.

I showed up to work and led the troops with my noggin noddin' and my rheumy eyes half-closed. I deferred decisions and radiated martyred misery. I led with a whisper, a whine, a sneeze and a sniffle.

Very inspirational. I should have known better.

Recently, in conjunction with last month's CIO Leadership Conference, I had the opportunity to interview Pulitzer Prize–winning historian David McCullough. (You can see excerpts from that interview in "David McCullough on Leadership," Page 30, or download our whole conversation at *www.cio.com/podcasts/leadership.html*.) Among the many things McCullough said that made a tremendous amount of sense to me was that leaders needed to be energetic. "You can't be in second gear all the time and be much of a leader," he said.

In order to summon that energy, in order to be the engine that drives the endeavor, in order to provide a positive example for the people who look to you to see how they should conduct themselves at work, executives and leaders have to take care of themselves. They need to stoke their own engines and do whatever it takes to feel good about themselves, mentally and physically. And while at first blush that may sound selfish, it is actually one of the most important parts of the job: making sure that you can come in to work each day with the enthusiasm, optimism and vitality necessary to lift the spirits of the people around you.

If you can't do that, you might as well stay in bed.

David Rosenbaum, Managing Editor
drosenbaum@cio.com

**CIO.com won the 2006 Jesse H. Neal National Business Journalism Award for Best Website.*

PHOTO BY WEBB CHAPPELL

©2006 Intel Corporation. Intel, the Intel logo, intel vPro, Intel Leap ahead., and the Intel Leap ahead. logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. All rights reserved.

intel Leap ahead™

MEET THE FOREST

(SAY GOODBYE TO THE TREES)

Introducing Intel® vPro™ technology.

It's the most exciting leap in business desktop computing since the introduction of the Intel Pentium processor over a decade ago.

The new Intel vPro technology is much more than just a new processor.

It's a remarkable combination of new technology that is optimized for business. Just about every repetitive task (installing software, upgrading licenses, running diagnostics) is made more simple and more efficient.

Pro Security.

Intel vPro technology is optimized to provide additional security at the hardware level of your desktop PC. Now users can't unknowingly (or even knowingly) disable security features. In fact, Intel vPro technology can even isolate infected PCs from the rest of the network so your company can stay online and productive.

Pro Savings.

Seventy-five percent of all IT budgets is spent on maintenance and integration costs. Intel vPro technology enables third-party software solutions to manage, secure and inventory your PCs regardless of power state or the health of the OS. Saving you time and money.

Pro Performance.

How is this possible? These benefits all run on dual-core technology that enables a responsive end-user experience. Even with your security and management tasks running in the background.

Now your network of PCs can actually report where they are, what they're doing and how they're feeling.

Intel vPro technology is a desktop architecture that is designed to add functionality, security and manageability to the solutions and equipment you already have installed.

Be Pro Active. Go Pro.

intel vPro™

You'll be reading and hearing more about Intel vPro technology in the next few weeks and months. You can find detailed information on how new Intel vPro technology will help your company or organization at **intel.com**.

The Operations Albatross

Moving money into capital investment is key to gaining competitive advantage

I spent time recently with Computer Associates CTO Mark Barrenechea at a tech conference in London. Barrenechea is a big believer in managing his IT staff efficiently. His reasoning is based on the fact that, as Forrester reports, on average, 76 percent of a company's IT budget goes to operational expenses, with less than 25 percent allocated to capital investments in infrastructure, application development or network expansion. Therefore, says Barrenechea, companies will gain competitive advantage by becoming experts at moving current and future operational expenses into the capital investment portion of the ledger. Or, as Martin Warner, a partner at the consultancy Bearing Point said at the conference, CIOs "must shrink their operational expenses to grow their firm."

These comments were in sync with recent *CIO* magazine research (*www.cio.com/state*) that reports that the top two barriers faced by CIOs are an "overwhelming application backlog," followed by inadequate budgets.

Most research firms forecast that IT spending will increase 6 percent to 8 percent in the coming year. That's better than in recent years but still not enough to make a significant dent in that growing application backlog. And while the tide of CIOs reporting to CFOs is ebbing, keeping costs under control remains a top priority for IT leaders as they shift their investment strategy to growing the top line.

So what's a CIO to do?

Here's a short exercise. Think of a company with a $100 million IT budget. Using the Forrester ratio, it will spend $76 million on operations and around $24 million on capital investments. Now throw in another $7 million for the 7 percent increase. If that company could move even 1 percent of its operational expenses into its capital expenses and allocate the $7 million for the same purpose, it will have $32 million to work with for new IT development.

Many CIOs now are focused on their 2007 budgets. Companies that follow the advice of Barrenechea and Warner will be more competitive than those that do not.

Gary Beach, Publisher
gbeach@cio.com

PHOTO BY WEBB CHAPPELL

CIO
BUSINESS TECHNOLOGY LEADERSHIP

PRESIDENT AND CEO Michael Friedenberg
PUBLISHER Gary J. Beach

CXO MEDIA

CIRCULATION
SVP, CIRCULATION Carol A. Spach
SUBSCRIPTION SVCS. SUPERVISOR Tina Pescaro

CIO EXECUTIVE COUNCIL
GENERAL MANAGER Mark Hall
PROGRAM DIRECTOR Shaw Lively
VP, DEVELOPMENT Dexter Siglin
MANAGING DIR., CONTENT DEVELOPMENT Richard Pastore
DIR., EXTERNAL RELATIONS Karen Fogerty
DIRECTOR OF RESEARCH Michael Swenson
MARKETING COMMUNICATIONS MANAGER Jennifer Baker
MGR. OF OPERATIONS AND PROJECT MGMT. Jean Costello
DIRECTOR OF RELATIONSHIP MANAGEMENT Steve Rovniak
PROGRAM SERVICES MANAGERS Michael Fahlsing, Ellen Friedman, Bill Golden, Carrie Mathews, Bill Roche
DEVELOPMENT MANAGERS
Ross Chapin, Patrick Clarke, Lauren DeLong, Steve Dodman, Robert Graham, Amanda Neal

EXECUTIVE PROGRAMS
VP, EXECUTIVE PROGRAMS Ellen Daly
DIRECTOR OF MARKETING Mary Cardwell
DIRS., BUSINESS DEVELOPMENT
Chris Mattoon, John Vulopas
DIR., EVENT PLANNING Amy Turell
CONFERENCE MANAGER Judith Kittredge
EVENT PLANNER Sarah Yee
DESIGNER Andrea Slobogan
CLIENT RELATIONS ASSOCIATE Lisa Byron
CLIENT SERVICES SPECIALIST Cress O'Brien

ONLINE
DIRECTOR OF ONLINE TECHNOLOGY Christopher Murray
MANAGER OF ONLINE PRODUCTION SERVICES Todd Borglund
SENIOR I.T. ARCHITECT Srinivas Dutta
AUDIENCE DEVELOPMENT MANAGER Judah Phillips
ONLINE PRODUCERS
Bill Hall, Jennifer McCarthy, Joe Nguyen
ONLINE ADVERTISING SPECIALIST Irina Gabechiia

INFORMATION SYSTEMS
IDG DIR. OF INFORMATION SERVICES Nancy Newkirk
INFRASTRUCTURE MANAGER James C. Burgoyne
LEAD DEVELOPER Sean McCracken
SENIOR USER SUPPORT SPECIALIST Christopher A. Kay
USER SERVICES SPECIALIST Gloria Lam
WEB DEVELOPER Sanghee Seo

PRODUCTION
VP, MANUFACTURING Chris Cuoco
PRODUCTION MANAGER Heidi Broadley
ASSOCIATE PRODUCTION MANAGER Lisa M. Stevenson

MARKETING
SR. DIRECTOR, MARKETING COMM. Sue Yanovitch
SR. MARKETING COMM. SPECIALIST Susan Maloney
MARKETING COMM. SPECIALIST Lynn Holmlund

RESEARCH
RESEARCH DIRECTOR Lorraine Cosgrove Ware
RESEARCH MANAGER Carolyn Johnson

ADMINISTRATION
COO Matt Smith
DIR., FINANCE Margarita Chiango
FINANCIAL ANALYST, ONLINE AND INTEGRATED PRODUCTS
Chris Bernardi
EXECUTIVE ASSISTANT TO THE PRESIDENT Diane Martin
BILLING SPECIALIST Joyce Gillis
FACILITIES SPECIALIST John Kelley
OFFICE SERVICES COORDINATOR Mary E. Wooldridge

HUMAN RESOURCES
VP, HUMAN RESOURCES Patricia Chisholm
SR. HR REPRESENTATIVE Beth S. Ramistella

CXO MEDIA INC.

INTERNATIONAL DATA GROUP
BOARD CHAIRMAN Patrick J. McGovern
PRESIDENT, IDG COMMUNICATIONS Bob Carrigan

BPA WORLDWIDE

Has your industry changed since you started reading this?
What do you do?

Manpower Professional offers skills training and job placement for permanent and contract positions in IT, engineering and other quickly evolving fields. Get up to speed. Call 866-531-0797 or visit www.manpowerprofessional.com change.

Manpower Professional

Manpower, Inc.

CIO

BUSINESS TECHNOLOGY LEADERSHIP

PRESIDENT AND CEO Michael Friedenberg
PUBLISHER Gary J. Beach

EDITORIAL

EDITOR IN CHIEF Abbie Lundberg
MANAGING EDITOR David Rosenbaum
EXECUTIVE EDITORS
Christopher Koch, Elana Varon
WASHINGTON BUREAU CHIEF
Allan Holmes
TECHNOLOGY EDITOR
Christopher Lindquist
SENIOR EDITORS
Stephanie Gelston, Stephanie Overby
SENIOR WRITERS
Meridith Levinson, Susannah Patton, Thomas Wailgum, Ben Worthen
CONTRIBUTORS
John Blau, Susan Cramm, Michael Fitzgerald, Martha Heller, Sari Kalin, Barry C. Lynn, Juan Carlos Peréz, Sarah D. Scalet, Nancy Weil
EDITORIAL ADMINISTRATOR
Jill Paquette

DESIGN

EXECUTIVE DIRECTOR, ART AND DESIGN
Mary Lester
ART DIRECTOR Terri Haas
ASSOCIATE ART DIRECTORS
Matthew Goebel, Chandra Tallman

COPY TEAM

ASSISTANT MANAGING EDITOR Emily S. Henderson
SENIOR COPY EDITORS
Diann Daniel, Cathy Mallen
EDITORIAL ASSISTANTS
Margaret Locher, Christopher Lynch, Katherine Walsh

ONLINE EDITORIAL

WEB EDITORS
Sandy Kendall, Paul L. Kerstein
ONLINE NEWS WRITER Al Sacco
ONLINE COPY EDITOR David Gradijan

RESEARCH

RESEARCH DIRECTOR
Lorraine Cosgrove Ware
RESEARCH MANAGER
Carolyn Johnson

CXO MEDIA INC.

INTERNATIONAL DATA GROUP
BOARD CHAIRMAN Patrick J. McGovern
PRESIDENT, IDG COMMUNICATIONS Bob Carrigan

BPA WORLDWIDE

©CXO Media Inc.

WHAT WE COVER, WHOM TO CONTACT

CIO CAREER
- Skills
- Job Specs
- Career Path
- Professional Development
- Personal Development

Meridith Levinson, *mlevinson@cio.com*
Stephanie Gelston, *sgelston@cio.com*

LEADERSHIP & MANAGEMENT
- Governance & Alignment
- Budget Management & IT Value
- Business Process Redesign
- Management Methodologies
- Project Management

Elana Varon, *evaron@cio.com*
Christopher Koch, *ckoch@cio.com*

SOURCING AND STAFFING
- Outsourcing/Insourcing
- Staffing
- Vendor Management
- Knowledge Management

Stephanie Overby, *soverby@cio.com*
Stephanie Gelston, *sgelston@cio.com*

RISK MANAGEMENT
- Security
- Privacy
- Business Continuity
- Compliance

Ben Worthen, *bworthen@cio.com*
Allan Holmes, *aholmes@cio.com*
Susannah Patton, *spatton@cio.com*

ENTERPRISE INFRASTRUCTURE
- Enterprise Architecture, SOA
- Middleware
- Enterprise Resource Management (ERP)
- Supply Chain Management (SCM)
- B2B Electronic Commerce

Christopher Koch, *ckoch@cio.com*
Ben Worthen, *bworthen@cio.com*

CUSTOMERS
- Customer Resource Management (CRM)
- B2C Electronic Commerce
- Business Intelligence

Thomas Wailgum, *twailgum@cio.com*
Susannah Patton, *spatton@cio.com*

TECHNOLOGY
- Emerging Technology
- Networking & Communications
- Data Center
- Storage
- Hardware

Christopher Lindquist, *clindquist@cio.com*
Thomas Wailgum, *twailgum@cio.com*

GOVERNMENT
Allan Holmes, *aholmes@cio.com*

COLUMN & DEPARTMENT CONTACTS

Applied Insight
Christopher Koch, *ckoch@cio.com*

Book Reviews
Elana Varon, *evaron@cio.com*

By the Numbers
Elana Varon, *evaron@cio.com*

Endlines
David Rosenbaum, *drosenbaum@cio.com*

Essential Technology
Christopher Lindquist, *clindquist@cio.com*

Forum
David Rosenbaum, *drosenbaum@cio.com*

InBox
Cathy Mallen, *cmallen@cio.com*

Keynote
Abbie Lundberg, *lundberg@cio.com*

Martha Heller
Stephanie Gelston, *sgelston@cio.com*

Michael Schrage
Abbie Lundberg, *lundberg@cio.com*

On the Move
Meridith Levinson, *mlevinson@cio.com*

Peer to Peer
David Rosenbaum, *drosenbaum@cio.com*

Susan Cramm
David Rosenbaum, *drosenbaum@cio.com*

Total Leadership
Elana Varon, *evaron@cio.com*

Trendlines
Elana Varon, *evaron@cio.com*

Washington Watch
Allan Holmes, *aholmes@cio.com*
Ben Worthen, *bworthen@cio.com*

E-MAIL *letters@cio.com* **PHONE** 508 872-0080 **FAX** 508 879-7784 **ADDRESS** *CIO* Magazine, CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, MA 01701-9208 **WEBSITE** *www.cio.com*
SUBSCRIBER SERVICES 866 354-1125 • Fax 847 564-9453 • E-mail *cio@omeda.com*
REPRINT SERVICES Jennifer Eclipse • PARS International • 212 221-9595 ext. 237 • E-mail *jeclipse@parsintl.com*
RIGHTS AND PERMISSION Yadira Pizarro • 212 221-9595 ext. 231 • E-mail *yadira@parsintl.com*

www.iss.net

With network security, if you're not ***ahead of the threat...***

you're only reacting to it.

Let Internet Security Systems stop network threats *before* they impact your business.

How do you ensure compliance and manage costs when your security is less than certain? Even "zero-day" solutions aren't fast enough to protect against losses once an Internet attack hits. The alternative is preemptive security from Internet Security Systems. Because our enterprise solutions are based on the world's most advanced vulnerability research, only ISS can can offer preemptive security and stop threats *before* they impact your business. **So why rely on "reaction" when security can be a sure thing?**

Need proof? Get a free whitepaper, *Preemptive Security: Changing the Rules,* at www.iss.net/proof or call 800-776-2362.

INTERNET | SECURITY | SYSTEMS®

Ahead of the threat.™

NETWORK & HOST INTRUSION PREVENTION | MANAGED SECURITY SERVICES | VULNERABILITY MANAGEMENT

©2006 Internet Security Systems Incorporated. All rights reserved worldwide.

InBox

POWERING down

Electricity-hungry equipment, combined with rising energy prices, are devouring data center budgets. Here's what you can do to get costs under control. BY SUSANNAH PATTON

Data Centers

A TYPICAL 10,000-SQUARE-FOOT DATA CENTER

Call for Return of the "Mainframe"

Regarding "Powering Down" [April 15], in the old days, when an application needed to be installed, IT managers didn't ask for a new mainframe; they simply created an environment, installed the application, and voilà, the application was available.

With the increasing power of mid-range and Intel-based servers, it's time to think of these servers (or clusters of them) as the modern mainframe. This is key; not only can it help save on power and cooling costs, but also it helps facilitate disaster recovery. Plus it can do magic to applications' availability.

Companies need large, powerful servers, or clusters of servers, that can serve a large number of applications, using a virtualization tool. Business users should be comfortable with the idea of having a piece of the mainframe, as long as it works.

I also call for application consolidation. In most large enterprises, there are just too many applications with redundant functions. Courage and persistence is needed from IT managers to convince business users to give up the "personal favorites" and accept enterprisewide alternatives.

SAM HOMER, PhD
Chief Consulting Officer
InFrontCorp.com

Toxic Leadership

Great article ["Toxic!" April 15]. What many people still do not realize is that quality leadership is a company's most significant competitive advantage. Gone are the days when products, in general, can compete on quality, price or service—those are now standards of entry into the marketplace. Leadership is now the key.

EMAD GEORGY
CIO, Infonte LLC
egeorgy@infonte.com

In 2001 I began working in a data center that had been under the leadership of a toxic director for 35 years. He was tolerated because his superiors perceived him as someone who got things done. He ruled with an iron fist, using fear as a motivator. He resigned shortly after I started, but his legacy lingers until this day. The problem? People who could not bear him left, so upper management is full of human sheep. When the strong "father figure" disappeared, no one knew how to lead, and no one could make a decision. It is imperative to not allow toxic behavior to flourish, because once it does, it will become entrenched and you will pay the price for years to come.

ANONYMOUS

Get the Right Team

While I enjoyed "Untangling Telecom" [March 15], I do have one comment. No matter how good a deal a CIO negotiates, it is all for nothing if the telecom's team cannot live up to what has been negotiated.

The very best deal can go awry if the carrier's team lacks the right skills. This team should include top-notch people in the following roles: the frontline salesperson, order management or provisioning person, billing person, data expert or engineer, voice expert and service manager. These people need to be in place, identified and immovable if you are to have a truly good experience with your carrier.

A great team can make up for some of the weaknesses in a contract or technology. Conversely, a weak team can make a good contract or technology perform horribly.

For the best deal, I also negotiate contracts that contain pricing and upgrade clauses. The difference comes in yearly commitment level. With most telecom contracts being three years, we always sign a contract that shows us meeting our yearly commitment by no later than the fifth month of the second year. That way every two years or so we can revisit the project and drive aggressive pricing, therefore keeping the incumbent honest and the other carriers involved and hungry.

SCOTT R. KRESSNER
VP and CIO, Rush Enterprises
kressners@rushenterprises.com

What Do You Think?

Send your thoughts and feedback to **letters@cio.com**. Letters may be edited for length or clarity. For a link to the articles mentioned, go to **www.cio.com/060106**

cio.com

CORRECTIONS

In our April 15 cover story, we incorrectly described the state IT staff's role on the Maine Medicaid project. CNSI contractors wrote the code while Maine staff oversaw the programming. We were also mistaken about Richard Thompson's start date. Thompson was appointed CIO in 2003 and took over the project in April 2005.

In the May 1 story "How to Keep the Web from Becoming a Trap," we incorrectly identified integration provider GXS.

We regret these errors.

Location, Location, Location...

It's fundamental to your business. Are you leveraging your location data?

Customer addresses, time zones, office facilities, service areas, political boundaries, critical shipments, utility networks, field-workers, real estate, mobile assets, and warehouses—location is mission critical in every organization.

By leveraging the location information that is inherent in your information systems, you can manage your organization more efficiently and cost-effectively, helping you gain a competitive advantage.

ESRI technology is a standards-based, scalable, and interoperable platform that can exploit location data in your business processes. With ESRI geographic information system (GIS) technology, you can make location information and analysis available to the people in your organization—at all levels—who need it most.

To learn more about leveraging your location data, please visit **www.esri.com/it** or call **1-888-373-1192**.

You have the location information; put it to work for you.

ESRI

Copyright © 2005 ESRI. All rights reserved. The ESRI globe logo, ESRI, ArcMap, www.esri.com, and ArcInfo are trademarks, registered trademarks, or service marks of ESRI in the United States, the European Community, or certain other jurisdictions.

CIO wishes to acknowledge the 2005 Editorial Advisory Board members for their ongoing guidance and reality check of the magazine's content and focus. We thank them for their generosity in sharing their insight into the world of IT leadership.

GREGOR BAILAR
CIO
Capital One
Falls Church, Va.

DOUG BARKER
CEO
Barker and Scott Consulting
Washington, D.C.

WAYNE D. BENNETT
Partner
Bennett Law
Wellesley, Mass.

LARRY BONFANTE
CIO
United States Tennis Association
White Plains, N.Y.

DENNIS CALLAHAN
EVP & CIO
The Guardian Life
Insurance Co.
New York City

SHEILA DONAHOE
CIO
Bluegreen
Boca Raton, Fla.

MICHAEL EARL
Professor of Information Management, Dean of Templeton College
Oxford University
Oxford, England

PAUL J. GAFFNEY
EVP, Supply Chain
Staples
Framingham, Mass.

ANDY GEISSE
CIO
AT&T
San Antonio

JOHN GLASER
VP & CIO
Partners HealthCare
Boston

SCOTT HEINTZEMAN
CIO
Carlson Marketing Group
Plymouth, Minn.

C. LEE JONES
Chairman, President & CEO
Essential Group
Gurnee, Ill.

SUSAN S. KOZIK
EVP & CTO
TIAA-CREF
New York City

BUD MATHAISEL
Corporate VP & CIO
Solectron
Milpitas, Calif.

SHELEEN QUISH
Former CIO
U.S. Can
Lombard, Ill.

REBECCA R. RHOADS
CIO
Raytheon
Lexington, Mass.

LARAINE RODGERS
President
The LR Group
Scottsdale, Ariz.

JAMES F. SUTTER
Senior Partner
The Peer Consulting Group
Newport Beach, Calif.

RICHARD W. SWANBORG JR.
President
ICEX
Boston

PATRICIA WALLINGTON
President
CIO Associates
University Park, Fla.

ROBERT P. WEIR
VP, Information Services
Northeastern University
Boston

STEVE WILLIAMS
SVP & CIO
Mattress Giant
Addison, Texas

Leaders Wanted/CIO Challenge Series

Challenge #1:

Teach everyone how to innovate with IT.

Solution:

Hyperion—your management system for the global enterprise.

Technology drives innovation. That makes you *Chief Innovation Officer.* So, how do you transform *innovation* from a buzzword into a sustainable part of your business? Visionary CIOs are leading the way with Hyperion performance management solutions. With Hyperion, you break down the barriers between finance, operations and planning and align them around a master data set. You give everyone the tools they need to continuously analyze and manage business performance—and invent new ways to improve it. Isn't that what real innovation is all about?

FREE ARTICLE FROM HARVARD BUSINESS REVIEW
How do other IT leaders drive innovation? Discover new insights and best practices from the Harvard Business Review and Hyperion. Go to www.hyperion.com/go/leaders

©2006 Hyperion Solutions Corporation. All rights reserved. "Hyperion," the Hyperion logo and Hyperion's product names are trademarks of Hyperion. References to other companies and their products use trademarks owned by the respective companies and are for reference purpose only.

Dell recommends Windows® XP Professional

intel
Centrino® Duo

NEW DELL™ LATITUDE™ D620 NOTEBOOKS FOR BUSINESS FEATURE THE FREEDOM OF INTEL® CENTRINO® DUO MOBILE TECHNOLOGY.

PURE DURABILITY

The magnesium alloy casing and built-in shock absorbers keep the new Dell Latitude D620 RoadReady.™ So you can worry less that it will stop when it drops. And keep your data protected from the unexpected. That's the direct path to success. That's pure Dell.

PURE DELL

www.dell.com/durable/ciomag | 1.877.440.DELL

Dell cannot be responsible for errors in typography or photography. Dell, the Dell logo, Latitude and RoadReady are trademarks of Dell Inc. Intel, Intel logo, Intel Inside, Intel Inside logo, Centrino and the Centrino logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
© 2006 Dell Inc. All rights reserved.

trendlines

EDITED BY ELANA VARON | NEW * HOT * UNEXPECTED

You'll Sneeze If Your Suppliers Get the Flu

SUPPLY CHAIN A simulation at MIT of an avian flu outbreak in China underscores the need for companies to consider possible supply chain disruptions as part of their plans for handling emergencies.

The simulation, hosted by the MIT Center for Transportation & Logistics in April, was played out before an audience by a panel of managers from companies such as Intel and Cisco who deal with emergency situations. Panelists took on roles within "Vaxonn Wireless," a mobile-phone maker.

IT wasn't represented on the panel, but that doesn't mean technology won't play a role in emergency management, says Ken Cottrill, a spokesman for the center. "In real life, the membership of an emergency response team changes as the situation progresses."

Panelists reacted to news that two workers at the "Geeling Manufacturing" plant in China, where Vaxonn phones were being manufactured, had fallen ill with suspected cases of bird flu. The Chinese government quarantined the plant on and off during the outbreak.

The crisis, which was contained within a couple of days, occurred as Vaxonn prepared to release its new SlimPhone 360. The Vaxonn

Continued on Page 24

The World Cup's Not-So-Smart Tickets

RFID Regardless of the outcome of the World Cup soccer tournament in Germany this month, the games already have made history. Never before have fans attending an event organized by the Fédération Internationale de Football Association (FIFA) been required to provide so much information about themselves that can be accessed so quickly.

More than 3.5 million tickets to the world's biggest sporting event are expected to be sold with embedded radio frequency identification (RFID) chips that will link ticket-holders to a database containing personal identification information, including their birth date and ID card or passport number.

Cup organizers say they need this information to combat black-market ticket sales and to keep out hooligans. But FIFA Secretary General Urs Linsi told the German newspaper *Tagesspiegel* that he would prefer to collect less information from fans in the future.

Fans viewed the ticketing requirements as excessive and privacy groups questioned the legality of gathering so much personal data for a public event. The German World Cup organizing committee was hauled into court over the issue. (The case was decided in the organizer's favor.)

There are rumors that security officials equipped with RFID scanners will monitor fans inside the stadiums, but the committee says there will be no in-stadium surveillance. The committee also stresses that no private data will be available on the RFID tags themselves.

–John Blau

PHOTO BY AP/WIDE WORLD PHOTOS/NG HAN GUAN

2006 Microsoft Corporation. All rights reserved. Microsoft, Windows, the Windows logo, and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

Microsoft

☑ GET THE FACTS.

TELEFLORA CHOSE WINDOWS SERVER OVER LINUX AND UNIX, AND SAVED 35% IN DEVELOPMENT COSTS.

"Developing our new POS system on Windows Server™ 2003 and .NET cost us 35% less than a Linux or UNIX solution, and we're able to deploy new features and new services twice as fast. That gives us and our 25,000 florist customers, a crucial advantage in our rapidly changing industry." –Jim Siplon, EVP/CTO

teleflora.

For these and other third-party findings, go to microsoft.com/getthefacts

Windows Server™ 2003

Online Banking's BOO-BOO

FINANCE People are banking online in greater numbers than ever before, but according to a recent survey, banks aren't keeping up with their customers' appetites for online financial planning assistance. After questioning 1,800 banking customers in the United States, the United Kingdom and Canada, IT consultancy Keane found that financial institutions are failing to tap into a growing market for online financial advice on topics ranging from retirement to college savings plans.

"Banks are fulfilling a lot of basic tasks online, but when it comes to financial planning, they are far less effective," says Paul Johnston, an analyst at Pilgrim Partners, a research firm that conducted the survey for Keane.

The Keane study comes at a time when people increasingly are checking their balances, transferring funds and paying bills online. In fact, the number of online banking customers in the United States grew to nearly 40 million during the last quarter of 2005, up 27 percent from the previous year, according to ComScore Networks.

The Keane study closely follows its January survey of banks, which found that financial institutions consider customer satisfaction with online services key to their revenue growth. And the most recent Keane study revealed that most customers are happy with their bank's online services. More than 70 percent of those questioned said they believe that their bank's site is secure, and most find the sites easy to navigate. But when customers were asked to go into detail, most said they don't think that their financial institutions offer good online financial planning tools or advice.

Johnston says that banks are missing a big opportunity by failing to use their sites to reach what he calls "aspiring planners"—the 61 percent of those surveyed who want and need help to plan for their financial future. According to the survey, almost 80 percent of these aspiring planners said they would use expert advice and guidance on financial matters. Most banks say they offer financial planning services online, Johnston adds, but the Keane survey revealed that customers aren't using them because, he says, most online planning tools are neither sophisticated nor easy to use.

"Banks need to focus on making their planning tools more interactive and fun to use," Johnston adds. "Build it and they will at least try it. If you get it right, they will use it."

–Susannah Patton

Suppliers' Flu

Continued from Page 21

"emergency response team" kept in touch with the Geeling plant throughout the ordeal and also requested regular updates from the World Health Organization and the U.S. Center for Disease Control. The panel issued statements to reassure employees and customers, coordinated what to say to the media, and discussed whether a different manufacturer could make the phones. Panelists also dealt with the unseen Vaxonn CEO, who tried to wrest control of the emergency response—going so far as to announce the SlimPhone would be shelved.

While the scenario that unfolded wasn't entirely realistic, the issues it posed are real. Besides the specter of avian flu, participants noted the upcoming Atlantic hurricane season (which begins June 1), recalled the aftermath of the September 11 terrorist attacks, and reflected on more ordinary situations such as power outages that can cause crises.

The main recommendation that emerged from the simulation is that all companies, no matter their size, should have a written plan for emergencies.

The plan can be general, but it is also valuable to contemplate scenarios such as a global pandemic that would lead to high rates of absenteeism and could require stockpiles of water, food, protective clothing such as masks, and the ability to house employees onsite if quarantines are imposed. Emergency plans also must encompass supply chain issues, taking into account scenarios that affect facilities a company relies on but that are outside the company's control.

It's best not to rely on a single supplier, said Tony Sundermeier, Intel's customer logistics manager for the Americas, who played the roles of the logistics manager as well as the head of sales and marketing on the panel. "The cheapest way [to make a product] may be to sole-source, but that can also be the most expensive way if the sole source has to close down," he noted. Sundermeier recommended that contracts contain "good exit clauses" in the event that an emergency means a company must back out of a contract.

–Nancy Weil

PHOTO BY iSTOCKPHOTO

IF YOUR BUSINESS INTELLIGENCE IS SO SMART

WHY ARE SO FEW USING IT?

YOU NEED BI WITH A HIGHER IQ

Information Builders powers the largest business intelligence deployments in the world. All of your employees–not just managers and analysts–need to make quick and informed decisions. That's why we pioneered Operational BI–to deliver intelligence directly to all of the people and processes that need it, inside and outside the enterprise. Our **WebFOCUS** software offers superior integration, scalability and usability. Add in years of experience and it's no wonder our customers save millions using business intelligence. **Make the smart move and call for your FREE BI Best Practices Assessment at 1.800.969.INFO or visit www.informationbuilders.com**

Information Builders

The Standard for Enterprise Business Intelligence

Security Is in EMPLOYEES' HANDS

TRENDLINES

BIOMETRICS A decade ago, William Beaumont Hospital, a 254-bed community hospital in Troy, Mich., had a problem with a small number of rogue employees who were stealing narcotics from a storage area.

At the time, narcotics storage was secured with a lock that opened by entering a code on a keypad. Security Director Chris Hengstebeck looked for ways to tighten control of the affected rooms and cabinets and to generate a log of employees accessing them.

The solution: a biometric hand geometry system, which identifies individuals through hand measurements. The hospital now has about 40 hand readers that control access not only to narcotics but also to the maternity ward and other sensitive areas. Hundreds of employees use the system.

To enter a restricted area, employees must punch in their unique ID number and then have their hand scanned. "We recognized that there was a problem with ID cards and passwords being stolen," Hengstebeck said during a presentation at the Winter 2006 Biometrics Summit. "The primary advantage of hand geometry over anything else is that it's inextricably linked to the user," Hengstebeck says.

The hospital has added a fingerprint reader linked to the cabinets holding narcotics to further control access. Now the hospital plans to use the hand geometry and fingerprint reader combination in areas of its $493 million expansion due to start this summer.

The system has several benefits besides improved access control. It helps with investigations. Linked with security cameras and a database of employee identification information, the system generates concrete evidence of possible improper or unlawful activities. It is also flexible enough that staffers can bypass it when they need immediate access, such as when a patient is being rushed to surgery. *–Juan Carlos Peréz*

Skills Workers Have Versus Skills CIOs Need

MANAGEMENT REPORT IT's mission has shifted from delivering systems to managing the process of delivering them, according to a study by the Society of Information Management (SIM). Within the next two years, companies will need more staff capable of managing projects and working closely with business users.

But many companies still fail to take business training into account when hiring entry-level staff, defaulting to candidates with technical degrees such as computer science and engineering, the report says. "If you look at computer science and engineering or some management science programs, there's been an emphasis on the technical skills, like programming," says Phil Zwieg, VP of IS with Northwestern Mutual, and VP for advocacy and communities of interest with SIM. College curricula, he adds, aren't changing fast enough to teach skills that businesses really need.

While the colleges try to catch up, company training programs can help fill the gap. The survey found that most companies provide both entry- and midlevel hires with some type of business training. But CIOs also may have to get creative in who they hire to fill upcoming vacancies, such as recruiting business users for IT positions. "I don't think a company can use just one avenue [for recruitment] anymore," says Zwieg.

SIM's survey of 96 executives from 89 companies found that more IT organizations of all sizes plan to expand rather than reduce staffs, although more small and mid-market enterprises expect to add employees than do large companies. Similarly, most companies, regardless of size, plan to outsource more work—particularly technical work—to third-party providers, although large companies intend to outsource more. Overall, however, the study concludes that the number of IT jobs won't change much between now and 2008.

The study identifies a number of business skills as core to successful IT operations, such as industry knowledge, project management expertise and business process knowledge. But it found no technical skill to be correspondingly critical.

–Elana Varon

The IT Skills Menu

Expertise that CIOs most want their staff to have

- Company specific knowledge
- Functional area process knowledge
- Industry knowledge
- Business process redesign
- Change management
- Management of stakeholder expectations
- Project management
- User relationship management
- Negotiation experience

SOURCE: SIM

PHOTO BY iSTOCKPHOTO

EMC²
where information lives®

Information lives in companies that run EMC software. As one of the world's largest software providers, we help companies of all sizes access, manage, protect, and share information. We can do the same for you—across applications, across platforms, across oceans. To learn more about how the full range of EMC software can help you and your company move up in the world, visit software.EMC.com.

Legal notices: Information herein is provided "as is" and subject to change. EMC Corporation © Copyright 2001 EMC Corporation. All rights reserved.

Iceland Isn't an Island Online

BROADBAND The Internet connects people, and maybe that explains why one of the world's most remote countries, Iceland, has edged ahead of South Korea in broadband usage, according to a recent survey.

Iceland topped the global ranking of high-speed Internet connections compiled by the Organization for Economic Co-operation and Development (OECD), with 26.7 percent of inhabitants subscribing to a broadband service. OECD members include 30 nations committed to democracy and a market-based economic system.

South Korea dropped to second place at 25.4 percent, followed closely by the Netherlands and Denmark.

The findings underscore growing European demand for high-speed Internet connectivity, with Finland, Norway, Sweden and Belgium also ranking among the OECD's top 10 broadband markets. Broadband subscriptions in each country grew more than 6 percent in 2005. Though it ranks 11th in the survey, the United States has the largest number of broadband subscribers, 49 million, accounting for 31 percent of all broadband connections among OECD member countries.

–John Blau

Wired Nations

Broadband subscription rates

Country	Percent of population
1. Iceland	26.7
2. Korea	25.4
3. Netherlands	25.3
4. Denmark	25.0
5. Switzerland	23.1
6. Finland	22.5
7. Norway	21.9
Canada	21.9
8. Sweden	20.3
9. Belgium	18.3
10. Japan	17.6
11. U.S.	16.8

SOURCE: OECD

New CIOs in Insurance

ON THE MOVE If there's one industry that's hungry for new CIOs, it's insurance.

Consider the following IT management changes that took place in the insurance industry earlier this spring:

In March, **Robert Ingram III** joined Argonaut Group as the insurance products underwriter's new senior VP and CIO. Ingram, who reports to Argonaut's CEO, previously worked for USAA as its senior VP for IT. In the same month, New York City–based Amalgamated Life hired **Raghubar Singh** as its new VP and CIO, and **Stewart Gibson** accepted the senior VP and CIO post at USI Holdings in Briarcliff Manor, N.Y. Gibson reports to the company's CFO.

Robert Ingram III

Meanwhile, in April, **Oliver Bussman** started his new job as the CIO of Fireman's Fund, replacing Fred Matteson, who left the company in January. Bussman came from parent company Allianz Group where he was Allianz Germany's executive VP of IT.

William Jenks

Also in April, **William Jenks** replaced Yom Senegor as CIO of Safeco. Senegor retired after five years with the company. Jenks previously worked for ad agency Publicis Groupe.

Insurance companies' appetite for new blood is driven by the many changes taking place within the industry, says Marc Cecere, a vice president with Forrester Research. These changes, which include corporate restructurings and IT modernizations, demand a different kind of CIO from the technical problem-solvers of the past. For example, Cecere says, because some companies are outsourcing more IT work as part of their business transformation efforts, they need CIOs who know how to manage contracts and service levels, as well as work with multiple service providers.

Cecere adds that the new insurance industry CIOs are also big-picture thinkers: "The CIOs I meet today tend to be concerned about their entire enterprises, rather than just a particular line of business, and they're more concerned about architecture."

–Meridith Levinson

cio.com Read Meridith Levinson's **MOVERS AND SHAKERS** blog for the latest moves. Find it at **blogs.cio.com**.

PHOTO TOP BY DPAESSLER

Blitzing and Intercepting Hard-to-Tackle IT Problems

Integrity Management: A Free Safety Behind Your Front Line

NO MATTER HOW GOOD your front line and linebackers, free safeties in football are fundamental. They often call defensive plays. They blitz in with their big picture view of the playing field when they see something developing and make tackles behind the line of scrimmage. And they make interceptions that save the game. So it is with Integrity Management.

When you've already got a firewall, a disaster recovery plan, monitoring tools, conference call capability for troubleshooting, redundant hardware, change management, a BSM tool, and a trouble ticket system, why on earth would you need an Integrity Management solution? For the same reason you need a free safety with his whole-field view backing up your front line.

Integrity Management fundamentally improves availability and service levels by augmenting the tools and procedures you already have in place. Given that your organization's productivity, revenue, and the value of your brand are at stake, it is your fiduciary responsibility to add Integrity Management to your defense.

Fundamental Need: Detecting Anything Abnormal

Integrity Management is fundamental because one of its core functions is to detect whether your IT systems are running normally or are being disrupted. The reality is that no matter how many defensive systems and processes you put in place, things slip through. Integrity Management detects the first signs of the abnormal behavior that results when a Trojan horse slips through system security. Or the bad change is installed. Or when the application server process queue grows because a broken index is slowing the database server. Or when the load balancer sends all traffic to the dead authentication server process because that server is least busy. Or whatever it is that's just not normal.

Most of the issues above underscore a tenet of Integrity Management, that system interdependencies, not individual component failures, are the primary threat to enterprise IT availability.

ILLUSTRATION BY ERIC PETERSON

In order to understand how Integrity Management augments existing availability tools, keep in mind the holistic nature of the early warnings Integrity Management provides. Like a free safety, Integrity Management sees the play developing and acts. To shift metaphors from football to flooding, detection of water spilling over the levee is insufficient. Integrity Management picks up the early cracks. Not in order to send a storm of "new crack" alerts, but in order to predict the failure of the entire levee system ahead.

Integrity Management Strengthens Existing Tools

Integrity Management doesn't replace existing tools: it strengthens what you already have in place. There are more examples, which we leave you to fill in as an exercise, but here are a few:

When The Firewall Fails, Integrity Management Kicks In

Firewalls and other perimeter defenses are absolute necessities. But when they come under attack, an Integrity Management solution notices their abnormal load. That means you can gird for possible success of the attack or take appropriate action if the abnormal firewall load is slowing a critical IT service.

Integrity Management is even more vital when a malevolent visitor gets through or is on the inside to begin with. The fundamental nature of Integrity Management is such that it will pick up abnormal behavior that occurs after the breach. Think of Integrity Management as the motion detector portion of a very smart burglar alarm, which looks not only for perimeter penetration but also unexpected movement once the burglar is inside.

Not Just Disaster Recovery: Everyday Recovery

Traditional thinking about availability and business continuity focuses on catastrophic events, and it's clear why such "insurance" is needed. What may be less clear is that similar focus is warranted for the many short-term disruptions to availability, whose aggregate likely cost exceeds that of the rare events that totally disrupt or displace IT operations. Rather than addressing the vague potentiality of disaster, Integrity Management mitigates the risk of the disruptions organizations experience frequently.

Besides mitigating the risk from everyday outages and service level issues, Integrity Management backs up your business continuity plan should disaster strike. Integrity Management can provide visibility into your processes for backup and for failing over to a redundant infrastructure, then focus on maximizing availability until your redundancy is restored.

Monitoring Tools Miss Emerging Abnormalities

Traditional monitoring tools are valuable: they tell you when you have a problem on a device. But it's not enough to send an alert when a "game over" static threshold is violated. True effectiveness demands picking up the first sign of abnormality that indicates a problem lies ahead. But detecting abnormal metrics is difficult because what's "normal" changes based on the dynamics of the end-to-end system load. Integrity Management solutions learn what's normal over time in order to set meaningful thresholds that adapt to changing conditions. You get a predictive alert at the first sign of trouble rather than after trouble has occurred.

Real-time Correlation Replaces Expensive Conference Calls

Take the example of a healthcare provider that routinely had a dozen IT specialists on conference calls for 4 to 8 hours trying to find the cause of a recurring problem. It got so bad the CIO joined the calls. Eventually, manually correlating what each specialist knew about their silos would hit on the cause.

Integrity Management takes the events that would ordinarily come in to each IT specialist's tool and correlates them in the context of the application experiencing difficulty. The metrics that are out of normal and slowing down the application jump to the fore and the expert who owns the issue is alerted immediately. Integrity Management can even correlate a set of alerts that precede a problem. While monitoring tools would pass them on as a baffling alert storm, Integrity Management sees them as a play developing and helps you go in and make the tackle with a crisp problem recognition and resolution alert.

Integrien Alive delivers Integrity Management.

Seeing Into the Redundant Hardware Black Hole

One issue with virtualization is that interdependencies are hidden behind the virtualization layer. Although you address component failure with redundant hardware, interdependencies actually increase as you "simplify" architecture with virtualization. To avoid this black hole, you need Integrety Management's holistic view and correlation of issues.

When a Change is Managed But Causes Trouble Anyway

The best change management system in the world can't prevent the occasional disruptive change from taking place. A CMDB facilitates rolling them back when they prove detrimental. But the issue of detecting abnormal behavior introduced by a change remains, and that's where Integrity Management comes in.

Business Service Management in Real Time

Business Service Management tools diagram the IT infrastructure components that provide business services and report on both potential business impacts and historic service levels. BSM is thus useful for planning and post mortem assessments. In contrast, Integrity Management focuses on preventing rather than reporting on trouble. Like BSM, Integrity Management depends on the Service Map, but applies analysis to it in real time to minimize the business impact when a service leaves normal operation.

Trouble Ticket Systems Need "This Trouble is Yours" Assistance

Assigning troubleshooting responsibility in distributed IT infrastructure is most effective when an Integrity Management system identifies the source of an issue and gives the right expert the responsibility (plus information needed to resolve it).

Integrien Alive™ Delivers Higher Availability Through Integrity Management

Alive Integrity Manager provides a unifying view into the operational "health" of business-critical services that cross multiple domains in your IT infrastructure. Alive maps a view of the most critical devices and metrics into a system of intuitive dashboards for troubleshooting problems in key services.

Integrien Alive's Integrity Management Tightens Troubleshooting Defenses

As seen in the figure, Integrien Alive tightly integrates the functions necessary to achieve true integrity in business services: dynamic thresholding (the basis for flagging abnormal behavior early); event correlation (based on statistics; no rule writing required); and an Integrity Alerts™ engine that narrowcasts the information needed to resolve a problem to the right expert.

Alive learns what's normal and "who owns what" in order to detect abnormalities and assign responsibility for correcting them. ●

For more information about how far beyond simple ROI Integrien Alive can take you by augmenting your existing approaches to availability and service levels, visit http://www.integrien.com

DEFINE **YOUR** OPEN ENTERPRISE™

In my Open Enterprise, automation manages IT resources so my IT staff doesn't have to.

Servers, platforms, applications, people and demands. You have more of everything except the money and resources to manage all of it. Resource Management software from Novell® runs on Windows,* NetWare® and Linux,* automating everything from policy and security enforcement and asset tracking to OS migration on desktop, laptop and handheld devices. So you can decrease IT effort and inefficiency. In fact, IDC reports that Novell ZENworks® yields a 1,012% three-year ROI with a 98.5-day payback period. Now that's a return you can count on.

Resource Management solutions from Novell.
This is the way to manage your Open Enterprise.

Novell®

This is Your Open Enterprise.™
www.novell.com/manage

Copyright © 2006 Novell, Inc. All Rights Reserved. Novell, the Novell logo, ZENworks are registered trademarks; This is Your Open Enterprise and Define Your Open Enterprise are trademarks of Novell, Inc. in the United States and other countries. *Linux is a registered trademark of Linus Torvalds. All other third-party trademarks are the property of their respective owners.

David McCullough on Leadership

INTERVIEW In his most recent book, *1776*, two-time Pulitzer Prize–winning historian David McCullough examines George Washington's leadership during the critical first year of American independence. *CIO* spoke with McCullough just prior to last month's CIO Leadership Conference. (To hear the full interview, visit *www.cio.com/podcasts/leadership.html*.)

CIO: Leadership today has become an academic discipline. What would 18th-century leaders have thought of that?
David McCullough: I think they'd be all for it but I think they'd wonder why we need special courses when so much of their education was focused on leadership. The importance of certain basic virtues in leadership were taught in the schools: honesty, punctuality, hard work, attention to the leader. So much of what we promote in the popular culture is discovering the self, freeing the self, nurturing the self—not exactly qualities that have much to do with leadership.

What were Washington's leadership virtues?
Being a good listener. And he knew how to handle failure. He almost always learned from his mistakes. If you're taking a look at someone, trying to judge their capacity for leadership, take a look at how they handle failure. Coolness, calmness under pressure—or at least the appearance of that—is essential.

Does leadership have an element of performance to it?
Being a bit of an actor is tremendously useful in a leader. Ronald Reagan, for example, was not the first actor to be president of the U.S.; he was the first professional actor. John Adams called Washington the greatest actor of his day. And he didn't mean that in a pejorative way. He meant that a leader has to perform the role of a leader. You have to look the part.

Do our leaders today look the part?
Leaders are not all alike. Some have certain strengths but lack others. Harry Truman had good common sense but not the ability to move people with words the way his predecessor Franklin Roosevelt did. A man like Jack Welch, it seems, knows very well what it means to be a leader. And it's always advantageous if a leader is perceived as lucky.

How can one be perceived as lucky?
One way is if you're cheerful and optimistic. "Life's going good. Everything's fine, fellows, let's keep it up." Reagan had that. Everyone just thought he was lucky. Some people ask if you can teach leadership. Absolutely. The military, I think, does a wonderful job.

Absent a military background, where does one get a leadership model today?
One way people have acquired a sense of what a leader is is through the culture. How leaders are portrayed on stage, in novels, in poetry. The ideal becomes clarified by the culture.

But we have a culture that tends to celebrate the antihero.
Absolutely. You've gone from John Wayne to Dustin Hoffman in *The Graduate*. A huge shift, and that's part of the problem. But if schools could teach kids to express themselves clearly, on paper and on their feet, that would be a great step forward in teaching leadership.

Can you distill a few critical leadership qualities?
Courage. And that includes the courage of your convictions. Honesty. What good is it if you can't be believed? Energy. You can't be in second gear all the time and be much of a leader. And intelligence. You have to be intelligent.

–David Rosenbaum

PHOTO BY WILLIAM B. MCCULLOUGH

Business Risk | Technology Risk | Internal Audit

TRUTH BE TOLD,

WE WORK HALF AS HARD

AS OUR COMPETITORS

ON ERP ASSESSMENTS.

We just don't need to pour our time (and your money) into assessing your ERP system the way the competition does. That's because at Protiviti, we've developed proprietary tools (and strategic relationships with the likes of Oracle®, PeopleSoft® and SAP®) that make our assessment process incredibly efficient. We can quickly move on to value-added tasks such as helping you automate your controls. In many cases, our Applications Controls/Effectiveness (ACE) solutions can eliminate 50 percent of your manual controls, netting you significant savings. What's more, our automated controls can enable continuous monitoring of your ERP system and improve the reliability of your Sarbanes-Oxley compliance efforts. Now those are the kind of things we *do* believe in working on really hard.

For a complimentary copy of our new publication, Guide to the Sarbanes-Oxley Act: Managing Application Risk and Control, *visit protiviti.com/ACE.*

protiviti®
Independent Risk Consulting

Know Risk. Know Reward.™

2006 Protiviti Inc. An Equal Opportunity Employer. Oracle and PeopleSoft are registered trademarks of Oracle Corporation. SAP is a registered trademark of SAP AG. All marks are the property heir respective owners. Protiviti is not licensed or registered as a public accounting firm and does not issue opinions on financial statements or offer attestation services. 0506-9014

Hitting to All Fields

How to break into a new industry and out of an old one without striking out

Seventeen years ago, you innocently took a job as an IS manager in a health-care organization. Now, after following a vigorous career trajectory from company to company in positions of increasing responsibility, you look in the mirror and staring back at you, to your horror, is a "health-care CIO." You've been typecast, but you're tired of the challenges endemic to your industry. You want a new role.

What do you do? How do you convince a financial services CEO, who is keen on bringing in a business-focused IT leader, that you are the best fit for the job? How do you move into a new industry without taking a backward step?

You don't, says Don Parker, who is executive VP of operations and technology at BOK Financial and has spent most of his career in financial services. "Ten years ago, when the application of technology was more generic, IT knowledge could translate across industries," he says. "But today, technology is how you compete, and your value as a CIO is based on your ability to drive the business. Your best offers will come from the industry in which you have expertise."

But despite the fact that securing a CIO spot in a brand new industry is a good deal more challenging than remaining in one vertical, many CIOs have bitten the bullet and made the move. Here is some advice from those who have switched industries on getting the job and keeping it.

1. Think carefully about the industry. You need to do a "gut check," advises Bart Thielbar, VP of IT at Northwestern Energy, who moved from insurance to utilities in 1998. "Are you moving toward something or away from something?" he asks. "If you've had trouble succeeding in one indus-

ILLUSTRATION BY JIM HAYNES

The CIO Leadership Conference

THANK YOU!

Hope to see you at these upcoming events:

The CIO 100 Symposium & Awards Ceremony
Delivering Innovation to the Enterprise

August 20-22, 2006
Hotel Del Coronado
Coronado, California

CIO|07 The Year Ahead
Issues. Ideas. Impact

November 5-7, 2006
Wild Horse Pass Resort & Spa
Phoenix, Arizona

Presented by *CIO* Magazine in conjunction with the CIO Executive Council

CIO Business Technology Leadership

CIO Executive Council
The Professional Organization for CIOs

The CIO Leadership Conference is proudly underwritten by

AMD
Sun microsystems

Official Host Sponsors

BlackBerry
WIRELESS DEVICES

iRise
VISUALIZE. INNOVATE. DELIVER.™
APPLICATION DEFINITION SOFTWARE

redhat
OPEN SOURCE

symantec.
SECURITY

Corporate Sponsor

FORTIFY
security starts here

hp
invent

INTEGRIEN™

ROBBINSGIOIA

Pharos Systems

try, you may have trouble in the next, and this time you won't have the same support networks."

Thielbar also advises CIOs to think long and hard about the future of the industry they are considering. "Understand that trends like regulations and consolidation will put pressure on your company and your job," he says. "Make sure you can stomach those trends."

2. Go for the late adopters. When Thielbar decided he was ready to move on, he looked for an industry that currently spent less money on technology than insurance did but that was gearing up to spend more. He saw that the utility industry was on the verge of automating its consumer processes, and he successfully set his sights on Northwestern.

3. Follow the vendors. Wayne Sadin, CIO of Aegis Mortgage, agrees with Parker that your best bet is to pick a great industry and stick with it because changing industries can be hard. However, if you are set on making a move, he suggests talking to your vendors about their market expansion plans. "Let's say you're an expert in imaging systems," he says. "Go to your imaging systems vendors and ask them what new industries they're trying to break into. Take advantage of all of that good market research." Chances are, if the imaging vendors are targeting a specific industry, companies in that industry will value your expertise.

4. Make subtle, not drastic, industry changes. Rafael Sanchez, VP and group CIO of Carnival, has worked in his share of industries, but they all have a common element—the consumer. "I've worked in consumer products, food service and travel," he says. "They definitely have their differences, but they are all focused on the customer, and from a technology standpoint they have a lot in common." If you're the CIO of a hospital and your goal is financial services, do a stint at a health insurance company before making your ultimate move.

5. Go pro bono. In 1999, Jan LaHayne, CIO and global leader of customer service for Littelfuse, moved from a career in the food industry to electronics.

She recommends that once you've selected the industry of your dreams, you do some pro bono work in that industry to get some experience on your résumé (and some contacts in your Rolodex). "Go to your industry's association and ask if there is something you can do for them," she suggests. "If I wanted to work for Microsoft, I would find out what nonprofits they support and do pro bono work for them. Now you're rubbing elbows with the right people. I'm doing that with the Brookfield Zoo," she says. "If I ever decide to go into nonprofit, I'll have the experience."

6. Highlight the similarities. Once you've found the industry, company and, most importantly, the CEO who will entertain your candidacy despite your lack of direct experience, you'll still need to manage your interview. When Mike Sebastian, who was directing PC operations for the

The Last Word

Martha Heller responds to readers' comments

The majority of readers who posted online or sent e-mail in response to this column agreed that with the right effort it is possible—and even advisable—to switch industries. As Scott Hicar, CIO of Maxtor, writes, "An opportunity is created in switching industries where you can represent 'out of the box' thinking amongst a team of industry veterans. Many best-in-class IT solutions have some portability that might not have been seen as standard practice in an industry with a different history."

But others were less convinced of the upside to industry switching. "You can change industries if you want to, but at what cost to your career?" asks Mike Anderson, CIO of Cosmetic Essence. "There is an unspoken 'birds of a feather flocking together' philosophy in business that means a retail CEO would rather pick a CIO with retail experience than one without it. If what truly differentiates one CIO from another is business prowess, then specific industry expertise is imperative for any CIO who wants to sit at the big table with all of the other grown-ups."

These competing opinions did not surprise me since I encountered them during my column research. What did surprise me was how often readers mentioned recruiters as a major obstacle to switching industries. "I am interested in making a switch from the technology services side to the client side," a reader comments. "I think my relationship-building and project leadership skills are transferable, but I am having a hard time convincing recruiters."

Recruiters are hired to execute on their clients' wishes. Any good recruiter will do her best to broaden a client's horizons about the talent pool for a particular job at the outset. But if a retail CEO—who knows his business better than the recruiter—is set on a retail CIO, the recruiter would be failing in her service delivery if she brought in nonretail candidates.

Getting recruiters to change their criteria is not the real challenge. The real challenge is to get in front of companies in a new industry by other means.

Dust off your Rolodex and see who you know in that field. Brand yourself as an expert in a skill that transcends industries, like supply chain management, and attend related events to network with peers from your target companies. These contacts may refer you to their CEO as a potential CIO candidate.

If the CEO is willing to look outside the box, he will typically ask the recruiter to reach out to you to assess your candidacy. Now you're halfway over the industry hurdle.

"Understand that industry trends like regulations and consolidation will put pressure on your company and your job. Make sure you can stomach those trends."

–BART THIELBAR, VP OF I.T., NORTHWESTERN ENERGY

San Diego Sheriff's Department, was on an interview at TD Industries, a construction company, he asked a series of questions about the outgoing CIO's interaction with the actual business of construction. "I learned during the interview that while its business may be construction, the company lives and dies by project management and remote connectivity," he says. "I was able to show them during the interview how important those skills are to the business and how relevant they were to my own background. In the end, I got the job."

7. Hire a number two from the industry. Aegis's Sadin suggests that once you've chosen your industry and landed the job, you should look hard at the experience of your direct reports to see what they can teach you. "If I were moving to a new industry, I would make sure that my number two comes out of that industry, or I would bring someone with industry experience in," he says. "When two levels of IT don't know the industry, discussions get pretty surreal."

To be clear, many companies want CIOs with industry experience and will not talk to you unless you have it. But there are plenty of cross-industry opportunities for CIOs who look carefully enough. For those of you who have made the switch, what experience or advice can you offer to your peers? CIO

Martha Heller is the managing director of the IT Leadership Practice at the Z Resource Group, an executive recruiting firm based in Boston. She can be reached at *mheller@zrgroup.com*.

©2006. MRO Software, Inc. All rights reserved. Maximo is a registered trademark and MRO Software is a trademark of MRO Software, Inc.

IT supports and controls the applications that run the business.

Now there's an application to support and control the business of IT.

Maximo® ITSM, the most comprehensive IT asset and service management solution, substantially improves the business of IT, significantly increasing the value IT brings to an organization. By unifying IT service, asset and work management on a single software platform, Maximo ITSM delivers the control and visibility you need to align IT service levels with your overall business goals. All you need to integrate and automate processes, reduce unplanned outages, standardize and share information and surpass service level commitments. To make your IT organization more efficient and more valuable, download our whitepaper at www.maximoit.com/cio or call 800-326-5765.

COUNTED CONTROLLED MAXIMIZED

mro software

make it *all* count

sprocket

IBM, What Makes You Smarter and the IBM logo are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. Other company, product and service names may be trademarks or service marks of others. ©2006 IBM Corporation. All rights reserved.

special sprocket *

* IBM is helping a heavy equipment manufacturer identify ways to cut IT spending by $200 million over the next two years. How? By helping its CIO view the entire IT infrastructure, right down to its sprockets and ball bearings. Then they can identify which parts are delivering value and which aren't and make changes to improve business performance. Want innovation for value? Talk to the innovator's innovator. Call on IBM. To learn more about what an IBM team can do for you, or to download a copy of our report The CIO Innovation Agenda, visit ibm.com/innovation/cio

what makes you special?

IBM

IT's Good News

CIOs need to help their staffers understand that if they can hold on during the tough times, the payoff is just around the corner

One of the fundamental jobs of a leader is to paint an exciting, positive view of the future that connects to the emotional concerns of his staff. This task is particularly critical for CIOs now as the stress on their departments intensifies with the business's hunger for IT services appearing to be bottomless even as it continues to stipulate that IT control its costs. Adding to the demands on the CIO's staff is the growing technical sophistication of their internal business partners, intensified competition from external service providers and the increasing trend toward the commoditization of IT processes, jobs and software.

Mark Walton, former CNN chief White House correspondent, writes in his book, *Generating Buy-In: Mastering the Language of Leadership*, that "stories are the language of our mind" and that the stories that have the greatest impact—on our thinking, our emotions and, ultimately, our actions—are stories "that project a positive future." The leader's challenge is to "connect the dots between the future you want and the future your audience wants" by 1) being clear about what you want your audience to do, 2) describing the positive future you want your audience to see, 3) illustrating how that future will fulfill their needs, wants and goals, and 4) asking for commitment and first steps toward bringing about the future you want.

Last month in "The Worst Job in IT" (*www.cio.com/050106*), I challenged readers to begin crafting a story about how IT will exceed the expectations of the enterprise while ensuring the success and satisfaction of the IT staff. I truly believe that IT is entering a new stage of maturity where it will be easier for IT professionals to do their jobs without the fear, overload and confusion that exists today.

ILLUSTRATION BY NISHANT CHOKSI

WHEN SERVING YOUR CUSTOMERS, WHATEVER CHOICE YOU MAKE, YOU'RE TOAST.

You know that the only way to succeed is by serving your customers better. But what organization can afford to throw endless dollars at improving the customer experience? With RightNow, you don't have to make a deal with the devil.

RightNow provides a breakthrough solution that lets you enhance your customer experience while reducing costs. By delivering knowledge at every customer touchpoint, RightNow helps you grow your business, one customer experience at a time. We've enabled more than a billion successful customer interactions for our clients in every major industry. Chances are, we can help you, too.

Find out why RightNow leads in client satisfaction. Download your free executive summary of CRMGuru's Solutions Guide at www.rightnow.com/toast or call us toll-free at 1.877.363.5678.

RIGHT NOW TECHNOLOGIES

The Long and Winding Road to Alignment

IT has always been a difficult profession. At first, business partners were totally dependent on IT and there was in truth very little IT could deliver due to the limitations of the technology and IT's necessary focus on delivering foundational transaction systems. Then, as PCs and client/server computing became prevalent, IT's frustrated business partners tried to address their own needs through the use of "end user tools" without the coordination or involvement of IT. IT found itself either fighting for control of systems (and people) that had become enterprise critical or being held responsible for poorly performing "user" projects and systems. Then, as the promise of the Internet and fears of Y2K generated unprecedented demand, the IT budget and organization ballooned. Not coincidentally, systems such as ERP were implemented that either were not ready for prime time or ended up overwhelming the organization's capabilities and finances. As a result, IT's reputation within the organization suffered, and it was forced to retreat to try to figure out how to satisfy the business's demands, often by finding efficiencies within core operating costs. But even during this retreat, the importance of managing IT as an enterprise asset and capability became obvious to every layer of the organization. Ultimately, this gave birth to healthy forms of interdependence (that is, governance, processes and roles) that mirrored practices found in other, more mature areas of the business.

IT jobs that touch on innovation will not be outsourced.

In the future, the interdependency of IT and the business will be sorted out so that IT no longer is responsible for the delivery of IT while the business just sits on the sideline waiting to judge the outcome. In this future, IT will be accountable for ensuring that IT is done well; the business will be accountable for implementing the technology to improve business performance. I call this enabling IT. Enabling IT requires creating relationships, roles, processes and an infrastructure that helps the business satisfy its day-to-day needs without involving IT. This means that IT 1) facilitates appropriate decision making to protect the interests of the enterprise, 2) defines data, business services, architectural guidelines and technology standards to coordinate the activities of the enterprise, 3) develops enabling infrastructure, tools, processes and support resources, 4) educates and coaches users and provides resources so that the business can manage projects and change, determine necessary functionality, and develop and deploy systems, and 5) provides development and operational resources and services on demand—both staff and technology—in conjunction with external suppliers.

In the future, IT professionals will become innovation experts by combining technology savvy, business knowledge, management discipline and the ability to play well with others. Those with a heavier technical orientation will focus on defining architecture and designing and developing infrastructure and enabling platforms. Professionals with a strong business orientation will focus on collaborating with the business on strategy, governance, and project and service delivery. Individuals with stronger management discipline will specialize in overseeing technology development, service and operational delivery, resource management and risk management.

The Story You Tell

The enabling IT model will address the IT professional's concerns about job security, the hierarchy of technical skills and the resources squeeze. It's undeniably true that commodity IT jobs will be outsourced. But IT jobs and roles that touch on innovation will not be outsourced. They won't be outsourced because they demand the ability to comprehend the connections among technology, data and business processes, and the ability to understand the connections between people and how work gets done within the organization. In this brave new world, IT's influence within the company will increase. Paradoxically, by giving up control over technology delivery, IT will gain authority as it can no longer be blamed for being a bottleneck to technical innovation. In addition, with the business doing (and paying for) the day-to-day development effort, much of the variable demand will be external to the IT department, thereby allowing IT to plan its work and ensure adequate funding.

All this means that there will be an incredible demand for innovation experts, and it will only be satisfied if the talented professionals currently in place adopt lifelong learning as their mantra. Learning can occur on the job and, in some cases, in the classroom, but now more than ever IT professionals need to take a hard look in the mirror, assess their skill sets, and then reach out for the learning opportunities that will expand their capabilities. The projected slowdown in labor growth will play to the advantage of those professionals who possess innovation-expert-type skills. In the future, these people will be able to write their own tickets, personally, professionally and financially.

The future of IT in your organization (and your own future within your organization) depends on your ability to communicate this story to your staff and have this model embraced by your company. If your organization doesn't understand already that today's pain is for tomorrow's gain, get busy writing your story. Doing so will ensure that IT's potential will finally be realized and the IT staff will have the best jobs in the business. CIO

Susan Cramm is founder and president of Valuedance, an executive coaching firm in San Clemente, Calif. You can e-mail feedback to *susan@valuedance.com*.

PHOTO BY ASA MATHAT

How do *you* maximize the value of IT?

IT is still one of the most misunderstood functions in business.
The CIO Executive Council, a professional community developed by CIOs, has focused its members' collective effort on this challenge. Their initiative has resulted in groundbreaking tools–the IT Value Matrix and Knowledge Center™–to help leverage the value of IT throughout the organization.

The IT Value Matrix illustrates the principles and practices essential to creating, identifying and communicating IT's value to the enterprise. Its online Knowledge Center provides best practices contributed by Council members, supplemented by case studies and how-to articles from *CIO* magazine that are grouped in categories that correspond to all the components of the Matrix.

Visit **www.cioexecutivecouncil.com/it_value** to get your own copy of the Matrix and to watch the IT Value webcast, presented by Agriliance CIO and Council member Steven John.

CIO Executive Council
The Professional Organization for CIOs

The CIO Executive Council was created by readers of *CIO* magazine and leaders within the community of CIOs to leverage the individual and collective strengths of its members by serving as unbiased and trusted advisors to each other, and by advancing the CIO role and profession. In just two years, more than 300 CIOs worldwide from various sectors and industries have identified with the Council's vision and committed to assist each other, cultivate their own careers and those of their team, and advance the role of the CIO. **To inquire about membership, visit www.cioexecutivecouncil.com.**

Founded by

Business Technology Leadership

Risk, Ahoy!

It may be time for Uncle Sam to step in and help manage corporate risk from global disasters, but that doesn't mean CIOs don't have a job to do in the meantime

It's so easy to forget the close calls. I was reminded of this while reading an article in a recent issue of *The New Yorker*, which looked back at one of the more terrifying international crises of recent years—the near war between India and Pakistan in 2002. That event marked the first time since the Cold War that two nations threatened to launch nuclear weapons at one another, and to this day it's not clear either country has developed a realistic plan about how to manage their weapons responsibly. Even so, this danger is almost entirely ignored by the ever-growing number of companies that rely on work done in India.

Some readers will wonder why a war in India, even if nuclear, should concern the average CIO. But others will see the point immediately, which is that the detonation of even a single nuclear weapon in a modern capital would all but paralyze the flow of information, money, goods and people into and from that country. This of course means that any company that has, say, located key back-office capacity within that nation's borders better have an airtight contingency plan that can be implemented immediately, using resources far from the affected lands. Yet as we all know, in a business environment shaped by intense global competition and shareholder pressure, such plans are increasingly rare.

Today's interconnected world is full of risks with the potential to trigger catastrophic business shutdowns. Flu epidemics, natural disasters, terrorist attacks, political uprisings, war—the dangers are so varied that it's only natural to feel a sort of paralysis when confronted with what might happen. Sometimes it seems the only option is simply to go about business as usual and pray that when the next disaster strikes, it won't

ILLUSTRATION BY ANTHONY FREDA

© 2006 SAP AG. SAP and the SAP logo are trademarks and registered trademarks of SAP AG in Germany and several other countries.

SOFTWARE SOLUTIONS FOR GREAT COMPANIES.

NOT JUST GREAT BIG COMPANIES.

MORE THAN 65% OF SAP CUSTOMERS ARE SMALL OR MIDSIZE COMPANIES:

You don't have to be a big company to face big challenges. Or to have big expectations. That's why thousands of small and midsize companies around the world maximize their advantage with flexible, affordable and proven software from SAP. Find out how SAP, together with our network of qualified channel partners, can be a good fit for your business – whatever its size. Visit **sap.com/yoursize**

THE BEST-RUN BUSINESSES RUN SAP™

SAP®

*Among Dun & Bradstreet, Inc. listed companies with employee number information. Small and midsize companies are defined as those having between 1 and 2,500 employees, and include customers of mySAP™ All-in-One and SAP® Business One solutions sold through resellers.

prove so devastating as to make recovery impossible.

Yet there are in fact many actions we can take to limit the risk, once we set our minds to the task. The catch? Well, actually there are two. First, any general fix will raise one's cost of doing business, at least temporarily. Second, and far more important, the only way to guarantee a level playing field, to ensure that all companies will be willing to accept the higher costs, is for the government to regulate the process by demanding that all companies respond to the new landscape of risk. This is true not only in India but in any country that serves as a major link in the new global economy.

CIOs who provide their executive team with a more realistic appraisal of the risks posed by global networks will reap greater responsibility and bigger budgets.

The Fallacy of Rationality

During the 2002 crisis, many companies doing business in India woke up fast to the risk of relying on key business operations and personnel located there. Yet as is so often the case, the fear faded almost as soon as the threat of war did, and it was not long before most companies were acting as if nothing had ever happened. We all know why it can be so hard to focus on political risk. For one thing, everyday competition is replete with near-term dangers that can seem far more pressing. More disturbing is the utopian thinking on the part of those who are supposed to manage political risk. An increasing number of executives seem to assume that the very fragility of their operations will discourage political conflict. Politicians, these executives believe, will always rationally conclude that their own self-interest and the interest of their people will be served best by avoiding any conflict that might throw a monkey wrench into smoothly operating cross-border business processes. One example of such thinking was a Thomas Friedman column in *The New York Times* about the Indian nuclear scare. More than the soothing voice of the U.S. Secretary of State Colin Powell, Friedman wrote, it was pressure from multinationals like GE that convinced the Indian government to "cool it."

It doesn't take much effort to spot the deep flaws in this thinking. The idea that national leaders, caught in a crisis that might cost millions of lives, would be influenced by the fear that foreign investment could suffer would be laughable were it not so naive. Not that such hubris is new to the world of business. Longtime IBM CEO Thomas Watson remained convinced until after the outbreak of World War II that international businesses could lead Adolf Hitler onto the road to peace.

Many executives scoff at the idea that government can really do anything to reduce the risks posed by a globally networked system of production. After all, for a generation now we have been told that the market controls us, not the other way around. We must keep in mind, however, that the corporation, and indeed the marketplace itself, are ultimately tools that can be shaped in different ways by different policies to yield different outcomes. We can adjust everything from trade rules to risk management systems, and do so in a way that boosts security while preserving true freedom for managers.

Change is already on the way. Policy-makers are fast waking up to the new nature of business risk, and they are beginning to alter long-standing policies. The problem is that their responses can prove to be counterproductive, if not downright dangerous. A perfect example is the U.S. port controversy, a case in which protectionists managed to chase away an important foreign investor without improving the security of the United States one iota. The real question for CIOs is whether they will help shape the new policies or simply allow their practices to be shaped by them.

There is much CIOs can do right now. Insist that all outside service providers prove they have detailed plans to deal with any contingency. Apprise other members of the management team and the board of directors of the global risks. Seek out counterparts at other organizations to share best practices and develop ideas about what sort of government regulations would result in true redundancy at the lowest cost. Simply requiring companies that do business in the United States to divide their information processing work equally among two providers, located in two nations, would dramatically lower the level of risk. Yes there will be some cost. But it will surely seem worthwhile to any CIO who wakes up one day to read of an outbreak of avian flu in, say, Bangalore.

Being the bearer of bad news won't make you the most popular executive at headquarters. But an honest assessment, supported by a well-thought-out plan to solve the problem, will gain you the respect of your peers. If anything, CIOs who provide their executive team with a more realistic appraisal of the risks posed by global networks will reap greater responsibility and bigger budgets. In some cases work that has been outsourced may need to be brought back inside. In many cases, outsourced work will have to be managed much more closely.

We must adjust our thinking to make sure this new world of outsourced activities upon which we now rely is flexible and redundant enough to absorb any political, economic or natural disaster that we can imagine. CIOs are in a position to help lead the way. CIO

Barry C. Lynn is the author of *End of the Line: The Rise and Coming Fall of the Global Corporation*. He is a senior fellow at the New America Foundation in Washington, D.C.

business users think answers should be **ONE CLICK** away. so do we.

Now you can eliminate user frustration and get the most from your BI investment.

Cognos 8 Business Intelligence is a single product that lets users move seamlessly between all BI capabilities — reporting, analysis, dashboarding and scorecarding.

It has one common, browser-based interface that makes it easy to learn and use. And a self-service platform that lets users get the information they need. Without navigating complex data systems. Or relying on IT. In short, it's BI that works the way users think.

Visit **www.cognos.com/oneclick** today.

COGNOS®

THE NEXT LEVEL OF PERFORMANCE™

Copyright © 2006 Cognos Incorporated. All rights reserved.

A former commissioner of the FTC weighs in on the need for a national disclosure law and stiffer FTC penalties for companies that fail to protect consumer data

SECURITY **CYBERSECURITY** CYBERSECURITY **CYBER**

A Job For Uncle Sam

ORSON SWINDLE has long been one of the nation's most cogent advocates of the notion that industry self-regulation is the best way for American businesses to improve information security and privacy. A Republican appointee to the Federal Trade Commission by President Bill Clinton in 1997, Swindle used his seven-year term to promote the creation of a "culture of security" in which the government, businesses and consumers work together to improve security.

These days, however, Swindle is coming around to the idea that federal regulation—carefully crafted and keeping in mind the costs and benefits to affected businesses—may be necessary to protect American businesses and consumers. His experiences with the FTC have made him aware of the limitations in the country's existing infrastructure to protect consumers against identity theft.

Swindle, 69, is now chairman of Security Initiatives for the Center for Information Policy Leadership at the law firm Hunton & Williams, and he is also a distinguished fellow at the Progress & Freedom Foundation, a think tank. He spoke with Sarah D. Scalet, a Senior Editor with *CSO*, our sister publication, about the challenges of improving information security and privacy.

Continued on Page 50

PHOTO BY DANUTA OTFINOWSKI

Orson Swindle, a former FTC commissioner and big advocate of industry self-regulation, now thinks federal regulation may be necessary to protect American businesses and consumers.

Identity & Access Management

FIGHT NETWORK THREATS

WITH A MIGHTY LEFT HOOK

MICROSOFT.COM/SECURITY/IT

Microsoft

Find tools and guidance to defend your network at microsoft.com/security/IT

- **Free Security Training:** Help secure your network with security webcasts and in-depth, online courses. Register now for free security management training, including upcoming Security Summits in one of five major cities.
- **Microsoft Security Assessment Tool:** Complete this free, online self-assessment to evaluate your organization's security practices and identify areas for improvement.
- **Antivirus for Exchange:** Download a free trial of Antigen® for Exchange and arm your e-mail server with powerful multi-engine protection from viruses, worms, and inappropriate content.
- **Free Tools and Updates:** Streamline patch management with automated tools like Windows Server™ Update Services. And verify that your systems are configured for maximized security with Microsoft® Baseline Security Analyzer.

© 2005 Microsoft Corporation. All rights reserved. Microsoft, Antigen, and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Microsoft

CIO: What's your perception of the state of information security today, and how close are we to creating this "culture of security" that you've envisioned?

Orson Swindle: We do have problems. I don't think the problems are nearly as bad as they are perceived, and part of that has to do with how the media covers things. This past year we've had probably in excess of 100 disclosed breaches, but the jump from disclosed breaches to grievous harm having occurred is a huge one. You'll hear "40 million credit cards compromised," but it's a much smaller number than that—a very low number—where harm has actually occurred. Oftentimes a disclosure is an emotional thing. It causes people to overreact. But that is not to say we don't have a problem.

"Having each state be its own little laboratory is useful in some things, and in some things it creates chaos. There needs to be a national disclosure law." –Orson Swindle

It's understandable that people would be upset when they hear about huge disclosures of information that are out of a private citizen's hands.

Absolutely. I think there is reason to be concerned. I think consumers need to be always diligent in how they handle their own information. Perhaps of greater significance, those who are in the business of handling the information have to wake up to the reality.

How do we follow the path from when information is stolen, to the point maybe nine months from now when that breach results in identity theft or fraud?

Great minds are working on this, and no one has a neat solution. Say a laptop with a lot of sensitive information on it disappears. Should the company immediately inform all those whose information was there on the lost laptop, when four days later it's found and nothing's been done to it? Do we want to cry wolf and scare people, or do we want to evaluate the whole sequence and determine if there is a real harm factor involved with this irresponsibility? As you say, we do have account numbers from credit cards exposed, and the effect of that doesn't show up for six months. How do you measure that? It's complicated.

Do you think the law leaves enough room for the company that gets that laptop back to do computer forensics on the hard drive, see that files weren't accessed in the past four days and not do a disclosure?

Sometimes the information is, in effect—I'll put quotes around it—"compromised," yet it has no use because it is encrypted. On the other hand, if because of lousy security a database is hacked into, and the person was doing it for a reason, that's very different. There's a management decision to be made involving risk management and risk assessment—trying to come up with the criteria by which you will implement certain reactive types of programs.

This fall, I attended a meeting where some businesses said, Look, we're not going to invest in enhanced information security because it's expensive; it has a low return on investment. I said, Really? Tell me how you crank in the risk to your reputation if you have a security breach. What about the cost or the liability of the lawsuits that are coming your way? The collateral damage is just enormous. Avoiding that cost, what does that do for your return on investment?

The marketplace has a way of working. Whether or not it works fast enough to avoid major calamities in the future, I don't know. But I know this. More burdensome regulation—and certainly more burdensome regulation driven by an emotional circumstance or perceived crisis—often gets us laws with unintended consequences. Cost of compliance is one. Cost-benefit analysis should be a part of any regulation imposing burdens on its targets.

It's been about a year and a half since the first disclosure law took effect in California, and similar laws have passed or are being considered in many states. Do you classify these disclosure laws as burdensome regulations?

I'm sure some would argue that they're burdensome, but I think they're obligatory. I think we are coming to a time when we must assess breaches by some measure for harm, and when there is harm, the firm suffering the breach will be obligated to notify the person about whom the information pertains. It seems to me that if we can tell a bank that if you lose my money, you're going to be responsible for it—that's why they insure it—then why not take the same approach with information?

Now we come into that inevitable problem in our federalist system: Do we want to have a standard rather than 50 different ways of doing it? What you get with 50 different ways is, the marketplace will decide which is the most onerous, and [companies will] adopt it and all the others under it.

Right, from a compliance perspective, companies would logically conclude that if they comply with the strictest state law, that would put them in compliance with other laws as well. Are you suggesting that there's a need for a national disclosure law that's less strict than California's?

I wouldn't begin to characterize it as less strict. Having each state be its own little laboratory is useful in some things, and in some things it creates chaos. I'm saying that there needs to be uniformity. Maybe a national disclosure law would be a mirror image of California. Maybe we combine two or three of the laws and come up with something that everybody says, "Well, that makes sense, let's do it that way."

What else do you predict for this legislative year?

We're going to probably see a broadening or extension of the safeguard rule in the Gramm-Leach-Bliley Act to cover a significant number of organizations that handle sensitive information but that aren't financial services institutions. There is a new awareness that personal information is very valuable, and it needs to be protected whether we're talking about a financial institution or a university or a shoe store.

WINDOWS®

LINUX®

Fujitsu PRIMEQUEST™ Servers with Intel® Itanium® 2 Processors.

Mainframe Reliability. Sized for the Mainstream.

For decades, CIOs have trusted Fujitsu mainframes to run their mission-critical applications. Now you can get the same robust engineering and innovative design with the highly reliable, high performance Fujitsu PRIMEQUEST servers featuring Intel® Itanium® 2 Processors. Designed for Microsoft® Windows® and Linux® environments to run mission critical applications, PRIMEQUEST servers harness the power and performance of up to 32 Intel® Itanium® 2 Processors, to easily accommodate your largest applications. They are designed with integrated networking and management features for simplicity, and offer flexible I/O and partitioning that enhances your agility to respond to dynamic business requirements.

System Mirror

PRIMEQUEST servers offer the ability to run memory and crossbars as mirrored pairs. This option, enabled via the Dual Synchronous Architecture in PRIMEQUEST servers, provides fault immunity for the hosted operating system and applications. The use of System Mirror transparently guards against hardware errors that could otherwise cause a system panic.

To learn more about how Fujitsu PRIMEQUEST servers bring mainframe reliability to mainstream environments, visit **us.fujitsu.com/computers/PRIMEQUEST** or call **1-800-831-3183**.

FUJITSU

THE POSSIBILITIES ARE INFINITE

intel®
Itanium® 2
inside™

© 2006 Fujitsu Computer Systems Corporation. All rights reserved. Fujitsu, the Fujitsu logo and PRIMEQUEST are trademarks or registered trademarks of Fujitsu Limited in the United States and other countries. Intel, Intel Inside, Itanium, Itanium Inside, the Intel logo and the Intel Inside logo are trademarks or registered trademarks of Intel Corporation or its susidiaries in the United States and other countries.. Microsoft and Windows are registered trademarks or trademarks of Microsoft Corp. in the United States and/or other countries. Linux is the registered trademark of Linus Torvalds in the U.S. and other countries. All other trademarks mentioned herein are the property of their respective owners.

You've said in the past that we are not knowledgeable enough to begin regulating. Do you think we're getting close?
The act of regulating is always moving by its very nature.

I remember the debate back seven or eight years ago we were having on taxing the Internet. I don't like the idea, and how would you do it? One study said that for a huge firm it might cost 13 cents to collect a dollar in taxes, whereas a little firm would probably have to spend 87 cents to collect that dollar. It just shows you the inequity of legislation. Again, that's not a product of evil intent. It's usually the product of number 1, a complex problem, number 2, influence on the way the legislation is shaped, and lastly, just not understanding and thinking through to the end, What's going to be the effect of all this? Does it make sense? That's why I have been consistently saying, Let's not rush in and start legislating. We don't fully understand this, and even if we did fully understand it right now, six months down the road the situation will have changed.

FTC enforcement of existing laws is certainly an alternative to new legislation. In your time as a commissioner, how effective do you think your attempts at enforcement were?
We were moving. The case with BJ's Wholesale Club was an example. That was a settlement stemming from a case presented back in May of 2005. [The FTC charged that BJ's did not reasonably protect sensitive customer information, leading to fraudulent purchases made with counterfeit copies of credit and debit cards.] The FTC's Unfairness Doctrine relates to conduct that a firm might engage in, which has the consumer at a critical disadvantage. Either the consumer doesn't know anything about it or can't do anything to correct it, and there's no countervailing greater good that comes from the conduct. Using the Unfairness Doctrine, the FTC basically said that BJ's Wholesale Club, by collecting sensitive and critical information and not taking adequate steps to protect it, had committed an "unfair" act against the consumers. A subsequent case for the FTC was DSW. [The FTC charged that hackers gained access to account information of 1.4 million customers of the shoe discounter.] The FTC nailed them on the same Unfairness Doctrine.

"We're going to see an extension of Gramm-Leach-Bliley to cover companies that handle sensitive information outside of financial services." –Orson Swindle

But here's one of the troubling things about the FTC. It's a civil law enforcement agency. It has a hard time enforcing criminal-like penalties. To do that, it has to go to the Justice Department, and of course, their plate is just a wee bit full. The FTC can only do so much in the way of punishing, as a famous man in town would say, "the evildoers." I often out of frustration would say, Our punishment amounts only to a small line item on this guy's financial statement: penalties paid to the FTC for this. You just wonder about the effectiveness of the penalty structure.

Should the penalty structure be changed?
We need to think about changing it in the context of what we're dealing with today, as opposed to what we were dealing with 30 years ago. Back then, if I had an important document that I kept in my office, and you wanted to do harm to me, you could break into my office and find it and steal it. That's a major crime. Today that document might exist in a digital format. It is within information systems that you can break into to steal the document. I'm not sure we think of that in the same way we did that physical thing. We need to rethink the nature of this type of crime and how it stacks up with those things we considered to be grievous crimes in the past.

Do you think the FTC needs criminal enforcement powers?
It's a controversial thing because the Justice Department is considered our criminal law enforcement. That's a very hot political potato. I don't want to get into that. I've often been known to say we need criminal authority over at the FTC. What we did as a compromise, perhaps not often enough, was we let some of our attorneys who worked on cases be deputized, in a sense, for the Justice Department.

The FTC recently announced its largest civil penalty to date—a $15 million fine against data broker ChoicePoint. [Disclosure: Hunton & Williams, the law firm where Swindle works, has represented ChoicePoint.] Are you surprised that the largest civil penalty in the FTC's history now involves privacy and information security?
No. This is serious business. And I think that Chairman [Deborah Platt] Majoras is doing a terrific job of getting that message across. The DSW and BJ's settlements said similar things, but as I recall there were no dollar figures associated with those settlements. With the ChoicePoint case, there were a number of different violations, including the Fair Credit Reporting Act, thus the penalty criteria is quite different from the "unfairness" nature of BJ's and DSW. The case involving ChoicePoint is pretty well laid out, and the violation was grievous. The FTC held firm, which I'm proud of.

The position of assistant secretary for cybersecurity at the Department of Homeland Security has been open for months. Why do you think it hasn't been filled?
I will refrain from answering. I'll tell you this: This administration, and every administration to follow, had better make a very concerted effort to put technology on the table and adequately stamp it so that we as a country and as a nation can maintain our supremacy in technology development and use. Sometimes I get the impression that we're not paying enough attention to technology. Every administration needs to pay a lot of attention to it. Information flows and the technology that makes it possible is the lifeblood of our economy—it's the way we do everything. We have to get this right. Otherwise we're just setting ourselves up for a lot of misfortune. We have become incredibly lucrative targets of opportunity. CIO

Senior Editor Sarah D. Scalet can be reached at *sscalet@cio.com*.

INNOVATIONS IN access

Florida Guardian ad Litem Saw the Future of Child Advocacy.

Citrix Provided Access.

"Custody rulings. Foster care. Adoptions. Our founding vision was to give every abused and neglected child in Florida a strong advocate in court. Two years later, we're well on our way. Today, program staff, attorneys and over 5,000 volunteers represent more than 27,000 children. Instead of information in file drawers scattered all over the state, Citrix software gives advocates secure access to our case management system from anywhere. Resources are precious, so we must apply them wisely, not waste time chasing data. These kids depend on us. That's why we're depending on Citrix to take us the rest of the way to advocate every Florida child in need."

JOHNNY C. WHITE
CIO
Florida Guardian ad Litem Program

Access your future today at citrix.com.

©2006 Citrix Systems, Inc. All rights reserved. Citrix® is a trademark of Citrix Systems, Inc. and/or one or more of its subsidiaries, and may be registered in the United States Patent and Trademark Office and in other countries. All other trademarks and registered trademarks are the property of their respective owners.

CITRIX®

A.G. Edwards CIO **John Parker** turned around an IT shop that was often late and over budget by instilling some project management discipline.

When Failure is NOT an Option

BY MERIDITH LEVINSON

Five years ago, almost half of A.G. Edwards' IT projects were late and over budget. Now it boasts an 88 percent project success rate. How did it do that? By galvanizing IT, reinventing its PMO, and relying on a standard framework to track projects and create accountability.

John Parker had no illusions about the considerable challenges awaiting him as CTO of A.G. Edwards. The management team had painted a clear picture during his job interviews in fall 2001. IT costs were too high. Projects dragged on for years, if they were completed at all. Some had derailed so dramatically that the St. Louis-based retail brokerage firm had to write them off. Poor project management was taking a toll on the bottom line.

The executives told Parker they needed a CTO who could overhaul the IT department and ensure that a planned five-year, $196 million migration of a mission-critical mainframe system would proceed smoothly. They simply couldn't afford to have a project of that magnitude follow IT's usual MO, where systems developed in isolation—sometimes over the course of years—often failed to meet the company's requirements once delivered. It just couldn't happen.

Reader ROI

:: Eight steps for improving project management
:: Transforming the culture
:: Reinventing the project management office

What Parker found after he was hired matched what he had heard during his interviews: Almost half of all projects were late and over budget. Most cost 54 percent more and took 54 percent longer than original estimates. And he found evidence of the write-offs. "We were running hundreds of projects over the course of a year, and 1 to 2 percent of them would have been written off and the write-offs would have been significant," says Parker, now CIO. In 2002, A.G. Edwards wrote off $46 million worth

PHOTOGRAPHY BY KEVIN MIYAZAKI

of software investments, according to a company filing with the Securities and Exchange Commission.

Fast-forward to 2006. The company's project success rate (defined by the number of projects that arrive on time, within budget and that deliver the expected business value) has soared from 54 percent in 2002 to 88 percent today. Improved project management has had a dramatic impact on the company's financials: The SEC filing shows that IT and telecom costs declined from $295 million in 2002 to $241 million in 2005, even as investment in the mainframe migration continued. Meanwhile, net profits jumped from $71 million in 2002 to $186 million in 2005.

Parker achieved this project management turnaround by transforming how IT operated—from its interactions with the business to the structure of its project management office. Experience has taught him there's more to running successful projects than methodologies and tracking software, which is where most IT organizations get hung up. Successful projects hinge on sound leadership and constructive relationships between IT managers and the business. So Parker set out to improve his department's track record by working with the company's top executives to identify the most important projects and by providing all IT managers with leadership training to improve their credibility with the business.

"If you try to fix project management without fixing the top first, you're not going to have much success," says Parker. "Projects will always flame out if your leaders aren't flying air-cover for projects when they get into trouble, regardless of how good your project management procedures and tools are."

Parker also brought in a project management expert to instill some discipline into the process. Ed Pilewski, now VP of IT productivity and quality, chose not to take the traditional route of forcing a rigid project management methodology on the technology staff—a tactic that can backfire and create resistance to change. Instead, he implemented a standard framework for measuring, monitoring and reporting on a project's progress that fosters transparency and accountability. The framework also gives project managers some flexibility in how they approach their work.

8 Steps for IMPROVING Project Management

1) **Identify current project success rates** and publish those metrics to your IT staff so they're aware of shortfalls.

2) **Set and communicate your new expectations** for good project management. This may include redefining project success.

3) **Provide leadership training to all managers** to boost their confidence, improve their credibility with the business and prepare them for the challenges that come up over the course of projects.

4) **Train staff** in any new project management methodologies you're implementing.

5) **Communicate new methodologies** to business users, and make sure they're on board with new processes and procedures. If they don't adopt them, you won't be successful.

6) **Foster joint accountability** between project managers and functional managers by getting them to work together more closely on a daily basis.

7) **Monitor and report on the progress of projects** to hold people accountable for completing projects successfully.

8) **Encourage project managers to communicate better and more frequently** with project sponsors and stakeholders by evaluating them on the business value their projects provide rather than solely on whether their projects are completed on time and within budget. *–M.L.*

The company also reinvented its project management office, or PMO. Project managers used to report into a centralized office; now they report into different functional groups within IT, such as application development, network engineering and quality assurance. The idea is to increase their stake in a project's success and put them on an even playing field with the functional managers. The mission of the productivity services office, as the PMO is now called, is to help project managers with planning and to provide them with the reports they need to keep their projects on track—a departure from the old, bureaucratic model.

In fact, A.G. Edwards' holistic approach to project management represents a departure from the standard operating procedure and is worth emulating, say field specialists. "Other companies are doing bits and pieces of what A.G. Edwards is doing," says Sam Lawler, director of GlassHouse Technologies' project management practice. "What makes A.G. Edwards unique is that they've made a real commitment as a firm to address project management top to bottom."

A.G. Edwards' top-to-bottom approach to project management has worked well for the company—and it can work for you too.

The Big Picture

The consequences of poor project management can be dire: Plenty of companies, from Nestlé to Nike, have seen earnings negatively affected by botched IT implementations. In

spite of the financial risk, many still haven't mastered project management: Just 29 percent of IT projects conducted in 2004 were completed on time, on budget and with all features and functions originally specified, according to The Standish Group, a consultancy that publishes a biennial benchmark report on IT project success rates.

Good project management is crucial to prevent backlogs as the economy quickens and companies take on more IT initiatives in 2006. "There's a strong need for project management today. With market conditions improving and profits starting to reappear in organizations, businesses have money to spend on technology, which increases demand for IT," says GlassHouse's Lawler. Yet CIOs cited project backlogs as their primary barrier to effectiveness in *CIO*'s 2006 "State of the CIO" research (see "The Project Backlog," *www.cio.com/state*). "Project management is the number-one success factor for getting anything done in an organization," says Lawler. "A firm's ability to execute its strategy lies within its ability to manage projects."

But project management isn't easy. A PMO or a formal project management methodology (such as PMI or ITIL) doesn't guarantee success, as A.G. Edwards, which had both, can testify. "I've gone into many organizations that use a project delivery methodology, yet their projects continue to fail," says Peter Graham, a vice president with consultancy Palladium Group. "If that's the only thing that's done, you may see some incremental uptick in quality or ability to meet deadlines, but you won't get sustainable results."

Projects remain challenged for two reasons. First, implementing formal methodologies requires a change management effort not just in IT but across the business. Second, PMOs often become minibureaucracies that fail to address the problems that dog projects, such as a lack of shared accountability between functional and project managers. The need to address those intractable challenges explains why A.G. Edwards couldn't simply rely on a new methodology or its existing PMO to improve project success rates.

Start from the Top

When Parker came on board in November 2001, he observed the classic case of the IT department as order-taker—never saying no to the business, and never explaining what it could and couldn't do vis-à-vis projects. He knew that to improve project success rates, he had to change this mentality and the business units' perception that IT staffers were passive or incompetent. "A successful project is really a marriage of businesspeople and IT people," says Parker, who oversaw a variety of successful fast-track projects while serving as Northwest Airlines' VP of information services from 1999 to 2001.

> **The real trick to project management is making sure that project managers understand that their customers play a key role in the project, and that the customers define success."**
>
> –Ed Pilewski, VP of IT productivity and quality, A.G. Edwards

At A.G. Edwards, Parker's first step was to make IT managers realize they were more than yes-men and yes-women and to build their credibility with the business. He began by providing ongoing leadership training to all 250 employees with management responsibility in his IT department. He wanted them to understand their role in achieving A.G. Edwards' strategic goals. Parker also reasoned that if the IT managers were positioned as bona fide leaders, their business-unit counterparts would take their opinions more seriously, and the groups would be able to work more collaboratively on projects.

"Leaders set the tone for the relationship with the business community and for the level of efficiency, discipline and performance that you get out of your IT shop," he says. "If your leaders are taking orders, there's no way they can effectively form the right kinds of relationships with the business to drive projects effectively."

The training was particularly important for frontline managers, who had always associated themselves with their teams and never with the IT leadership. Parker sought their participation because of the close influence these managers have on staff who execute the project work, from writing code to testing functionality. So he created a series of quarterly meetings during which line managers learn to work with budgets, provide vision and express opinions diplomatically.

Parker also worked with CEO Robert Bagby and the senior management team to align IT with the business strategy. The goal was to establish a plan to strengthen and streamline business operations and identify the technology to enable growth. To do that, he met regularly with a governance committee that comprised the top eight executives to facilitate alignment and consensus on the most important initiatives. Pinpointing priority projects meant that Parker could focus his troops on their execution. He says if you don't zero in on the initiatives that support business strategy and generate revenue, you end up with your employees working on low-value projects, like changing screen colors.

Transforming how IT managers perceived themselves and did business was a dramatic shift for the department and for the company. Although Parker had support from senior management, he still met resistance from certain "bad actors" in the business community

Steps to Success

Project managers at A.G. Edwards monitor **25 KEY ACTIVITIES IN THE LIFECYCLE OF A PROJECT**. For a breakdown, visit **www.cio.com/060106**.

CIO.com

who refused to use the proper channels to request work or to follow the new processes for specifying requirements.

Parker initially opted for a subtle approach to this problem. "I didn't march into anybody's office and say, 'These are the new rules of engagement with IT.' That just wouldn't work," he says. Instead, Parker positioned himself as the good cop with recalcitrant colleagues. He would mention to them the challenges he had with certain division heads or managers. He stopped just short of saying, "This is the problem I'm having with you. You need to stop second-guessing the platforms we've chosen and stop telling your direct reports not to give us the detail we need around requirements."

He also made positive examples of division heads and managers who engaged with IT and encouraged them to act as proponents for change. When he needed to be direct with those division heads who were telling their employees not to provide detailed requirements, he showed them charts explaining how that would increase the likelihood of project failure.

Parker often used consultants to play the bad cop. For example, he had them spell out in no uncertain terms that businesspeople had to develop their requirements with more detail. But Parker himself could also be tough in dealing with toxic "IT bashers" who deliberately worked against the technology department. If he couldn't get them to "cease and desist" on his authority as the CIO, he asked their bosses or their bosses' bosses for help.

VP **Ed Pilewski**, moved the project managers out of the PMO and into the functional areas to give them skin in the game.

Implement the Tactical Plan

With the IT strategy set, a governance committee for prioritizing projects in place and leadership development under IT managers' belts, it was time for a fresh approach to project management. To get the ball rolling, A.G. Edwards hired Pilewski as an independent consultant in June 2003. Three months later, he was named VP of IT productivity and quality.

Pilewski knows a thing or two about project management. Prior to A.G. Edwards, he spent six years as an independent consultant turning around large IT projects in danger of failing. He also worked for Capgemini as director of project delivery for its Midwest division.

When Pilewski arrived, the brokerage firm already had a project management methodology in place. Pilewski kept that. Then, he made a pivotal change: He introduced what he calls the standard plan framework to monitor and report on the progress of projects. The framework is basically a set of repeatable steps designed to improve project delivery and accountability. Pilewski had used it before and knew it could benefit A.G. Edwards.

Here's how it works: The framework lists 25 activities for managers to track during a project's lifecycle, such as developing architecture specifications, performing requirements analysis and building test plans. Project managers are also responsible for tasks within each activity. In the requirements analysis phase for a corporate recruitment application, for example, the project manager was asked to document exactly

Continued on Page 62

Sterling Commerce leads the world in helping businesses collaborate with their partners.

Of course, we've had a 30 year head start.

For over 30 years, Sterling Commerce has led the industry in helping successful organizations work more effectively with suppliers, subsidiaries and customers. Now, with the first platform to meet all the challenges of real-world multi-enterprise collaboration, Sterling Commerce can help you achieve end-to-end visibility, and real-time control over shared business processes. So you can make faster, better-informed decisions to help cut costs and accelerate time to market. In fact, a majority of the world's leading companies already depend on us. That's a tough act to follow. Contact us today. Or visit us at **www.sterlingcommerce.com**

BUSINESS APPLICATIONS / BUSINESS INTEGRATION / BUSINESS INTELLIGENCE / BUSINESS PROCESS MANAGEMENT / SOLUTION DELIVERY

©2006 Sterling Commerce, Inc. ALL RIGHTS RESERVED. Sterling Commerce and the Sterling Commerce logo are trademarks of Sterling Commerce, Inc. Sterling Commerce is an AT&T company.

krona

IBM, What Makes You Special and the IBM logo are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. Other company, product and service names may be trademarks or service marks of others. ©2006 IBM Corporation. All rights reserved.

special krona*

*How do you make money in banking? You meet the ever-evolving expectations of your customers. IBM has solutions to help CIOs in every industry align IT infrastructure with business goals, so they can unlock value and improve service. We've helped a major bank respond faster to its customers and identify $40 million in potential savings. Want innovation for service? Talk to the innovator's innovator. Call on IBM. Start by downloading our thought leadership piece The CIO Innovation Agenda. It won't cost you a krona. Or to learn about what an IBM team can do for you, visit ibm.com/innovation/cio

what makes you special?

IBM

 Continued from Page 58

what the business group wanted the application to do.

Another benefit of the framework is that it highlights existing systems that require, say, more memory or new interfaces as a result of a proposed software implementation or infrastructure upgrade. Doing so pinpoints interdependencies that a project and functional manager need to be aware of to keep things on track.

The framework also identifies the IT groups working on a project as well as the time each will devote to it monthly, which can improve communication and resource issues. For example, an effort to implement new customer-facing technology in all of A.G. Edwards' branch offices fell behind schedule because overburdened project managers didn't have time to loop in functional managers. As a result, they often demanded at the eleventh hour that functional managers drop everything and devote team members to the technology upgrade. Using the framework, Pilewski was able to get the project under control. The framework raised the project's visibility inside IT and made it clear when managers needed to install infrastructure or test hardware and software.

The standard plan framework establishes the high-level activities that need to take place across all projects. To drill down, Pilewski and the project planners, managers and developers use software from Primavera that provides dashboards and progress reports for project tracking. They can compare original estimates with actual costs, see if milestones are met, list activities required for completion, or view all the projects that a functional group in IT is working on. Primavera also provides the data to the project management office, which uses it to identify when different IT functions should be brought into a project or when activities such as building test plans need to take place. All the company's 126 projects follow Pilewski's framework, so they're measured the same way; the same activities are monitored across all projects using the software; and the data that project planners feed into the software is consistent and yields apples-to-apples comparisons across projects.

Notably, the standard plan framework does not specify how project and functional managers should perform each of those 25 steps, which distinguishes it from a traditional project methodology. By outlining *what* they need to keep track of instead of how they need to keep track, says Pilewski, the framework gives project managers the flexibility to break down their own work. In addition, they can use the framework in conjunction with any application development methodology, he says. That's important because project managers can find standard project management methodologies too rigid and constraining.

Just 29% of all IT projects conducted in 2004 were completed on time, on budget and with all features and functions originally specified.

SOURCE: The Standish Group

"Companies are too big and too complicated to standardize on everything," says Patrick Boylan, CEO of Intellilink Solutions, a boutique consultancy specializing in project management. "They need to find a way to get some form of control over projects while also giving the IT department the flexibility it needs to respond to clients." A.G. Edwards has done exactly what Boylan suggests using its standard plan framework.

The Art of Persuasion

Although the standard plan framework is flexible, it was a tough sell inside the IT department. To win over the staff, Parker and Pilewski used various tactics. First, Parker appealed to his team's sense of professionalism. He knew they weren't happy that projects took years to complete. In one-on-one conversations, meetings with individual teams and formal town hall sessions, he told his workers that the framework would help them meet their milestones.

Pilewski then identified the project managers receptive to new ideas and hungering to improve their effectiveness. He asked them to get involved in pilot projects—a small product acquisition project and a large infrastructure application upgrade—where they used the standard plan framework for the first time. Pilewski then used those project managers as evangelists to get the rest of the team on board.

Pilewski and his project management office also provided planning services to all project managers so they wouldn't feel overwhelmed by learning a new tool with new requirements. Specifically, the PMO built a project manager's individual plans into the standard plan framework. All a manager had to do was specify the way she wanted to break down her work and whether she wanted the plan in Microsoft Word, Excel or on a whiteboard. Pilewski says providing those services prevented a groundswell of negative energy from forming around the framework.

Finally, Parker cajoled IT into embracing this new and more disciplined project management mentality by measuring project success rates and publicizing those metrics in quarterly reports delivered to A.G. Edwards' top brass. He figured that if his staff knew he was briefing senior management on these metrics, they would take project management more seriously.

Redefine Success

In addition to implementing the standard plan framework, Parker redefined project success. Instead of defining it as completing a project on time and within budget, A.G. Edwards also weighs its business value, a key criteria to the project sponsors. So if a project is not completed on time but delivers

➤ **VIRTUAL REALITY APPLICATION CENTER**
Iowa State University

INFORMATION TECHNOLOGY COMPANIES

LIKE WHAT THEY SEE IN IOWA.

BE ON THE EDGE OF TECHNOLOGY IN IOWA, home to the fastest-growing economy in the Midwest. Iowa's vibrant I.T. sector employs more than 46,000 people at 3,000 companies. Here, unique partnerships between business and leading public universities create an environment of innovation and productivity. Iowa institutions rank among the nation's leaders in numbers of licenses issued to businesses and options executed by industry for university-developed technology. Iowa's I.T. workforce is one of the most productive anywhere — a byproduct of the life|work balance and off-hours amenities that have helped create the nation's 3rd-most-livable state. See why Iowa is virtually perfect.

Log on to iowalifechanging.com or call 800.245.IOWA.

IOWA
life | changing

www.iowalifechanging.com

THE WORLD ACCORDING TO JAMES

I believe less is more. I believe convergence is the path to greater harmony and sustained growth. Dynamic Networking from AT&T enables James to integrate voice, data and video onto one global IP network that reaches 127 countries. So his company's applications run more efficiently around the globe. And with AT&T BusinessDirect,® James gains not only the control and visibility of his entire network, but the inner peace he seeks.

att.com/networking

the expected business value, the company still considers it a success.

Parker didn't change the definition of success to lower the bar; he redefined victory so internal customers had the final say on project success and so it more closely aligned with their needs. For example, when IT was asked to create an application to recruit financial consultants, the project looked like a quick, low-cost development effort, according to Pilewski. In working with the sponsors on the functional requirements, the project team realized the competitive advantage of using this software to recruit the best and brightest brokers. They realized they'd have to devote more time to getting the application just right. The project took three times longer than planned and cost more than double its original estimates, but it's still considered a success because it has enhanced the recruiting process.

> **A successful project** is really a marriage of businesspeople and IT people."
>
> –John Parker, CIO, A.G. Edwards

"Project managers focus so much on cost and schedules," says Pilewski. "The real trick to project management, though, is making sure that project managers understand that their customers play a key role in the project, and that the customers define success."

He also restructured the PMO to foster joint accountability between project managers and functional managers within IT, whose agendas are often at odds. "People in IT infrastructure have day jobs," says GlassHouse's Lawler. "They're dealing with production outages and fighting fires, and those issues often take precedence over a project, so projects slip and slip."

Pilewski says that scenario was the reality at A.G. Edwards when he arrived. To fix it, he moved the project managers out of the PMO and into the functional areas to give them skin in the game. When the managers reported into the PMO, they didn't have to live with the changes made to IT systems as a result of their projects. The new arrangement increases a project manager's stake in a function because he is working with those systems every day.

This new reporting structure also eases the burden on functional managers, who sometimes coordinated with multiple project managers for each initiative their group worked on. Now they meet with one project manager, who is assigned to their functional group. Additionally, functional managers now have access to reports from Primavera that identify the projects their groups are responsible for so that they can plan workloads and effectively allocate their teams across projects.

Credibility Gain

IT's stock within the brokerage house is on the rise these days due to its newfound ability to manage projects and help the business meet its goals. Project write-offs are a thing of the past. "We're getting more for our money because we're running projects more efficiently," says Parker.

And what of that $196 million mainframe migration that he was hired to steer? Parker says the first phase of the multiyear project, while taxing, went smoothly. The project team converted the old legacy system to the new one in May 2005 as originally planned. And although the budget grew 5.5 percent, Parker says it remained "well within established parameters." Impressed, A.G. Edwards funded the final phase of the project, which should be complete by 2008.

"We've made huge strides," says Parker. "If we had a 1,000 percent improvement we needed to make, we've probably made 700 percent of it. We still have 300 percent to go." CIO

Senior Writer Meridith Levinson can be reached at *mlevinson@cio.com*.

Dynamic Networking. Delivered.

Dynamic Networking from AT&T is a comprehensive approach to optimizing business performance including the services and intelligence of a converged networking environment.

Converged networking delivers:

- High-performing business applications for greater value, efficiency and productivity.
- Information delivered faster to the people who need it — decision makers, sales, customers and suppliers — for increased collaboration and responsiveness.
- Improved control across all activities in the organization to identify changing circumstances and adjust network performance in response.
- One global IP network that reaches 127 countries for flexible growth.

Learn how Dynamic Networking can enable your enterprise by downloading the white paper series, *Convergence, A Four Point Framework*, at att.com/networking.

The new at&t Your world. Delivered.

welcome to my blog

BY MICHAEL FITZGERALD

Blogging isn't the same as writing a memo or a message in the corporate newsletter. And while it may not be as revolutionary as some make it out to be, there's still value there. Blogs provide a quick way to publish on the Web and even create an online version of a watercooler discussion. If that appeals to you, here's a piece on the basics of writing a blog.

Since you're new to blogging (only a handful of CIOs blog) I'm writing this in the form of a blog to give you an example. Note that I'm writing in the first person. I'm also going to refer you to a lot of websites. Bloggers use links as a form of shorthand, so they don't have to stop to explain what they're talking about—a technology or a news story, for instance—and readers can click the link if they want to learn more. Go to *www.cio.com/060106* to find all the links in the online version of this story.

To be honest, I don't come to blogging lightly. It made my nose wrinkle for a num-

Advanced COMMUNICATIONS

"Welcome to My Blog" is fifth in an occasional series titled **Advanced Communications**. These articles feature practical advice designed to help you improve the communication skills you need to succeed as managers and leaders. Find the series online at **www.cio.com/specialreports**.

ber of years. It looked like a reprise of the old Web community fad. That also promised to change the way people communicated, but its biggest impact was on how people gazed at their navels. It was also hard to see who would blog if they didn't have an ego the size of Everest, and why anyone would read something that seemed to consist mostly of screeds, outbursts and rants, which inspired not rational discussion but "flogs" (as in flame blog posts). Even the best blogs once seemed to push vendettas more than agendas. But things have changed.

"It's just a medium [for communication]" is what I was told by Margaret Mason, etiquette columnist at TheMorningNews.org and author of the forthcoming book *No One Cares What You Had for Lunch: 100 Ideas for Your Blog*.

That helped me stop overthinking blogs. They're not a profound new means of expression. They're just a tool—another arrow in the communications quiver. If this were a real blog, I'd keep things short and stick to one topic per posting. Here, I'll cover three things: how to get started, how to navigate the blogosphere and a few final tips.

By the way, now that I'm blogging, I'm not going to change my personality. Anil Dash, who is a VP of professional services at Six Apart and has six (!) blogs, is one of several people who told me that I need to sound like me, or no one will take my blog seriously. He also warned me not to fall into the TMI (too much information) trap. "People got into trouble by feeling they should 'out-candid' each other," Dash says. "That's kind of a losing game."

But blogs do need to have a point of view: yours.

How to Get Started

The "rule of three" is the idea that people like things that come in threes. It's a good rule of thumb in writing—blogging is primarily writing—so the rule of three works well for it. Here are my three ground rules for blogging:

1. Know why you're blogging. There are lots of reasons to blog. Peter Siegel, CIO at the University of Illinois at Urbana-Champaign, blogs to get input on potential technology directions. Will Weider, CIO at Affinity Health System and Ministry Health Care, blogs both to argue the conventional wisdom about IT in health care and to boost his profile. When Philip J. Windley was CIO of the State of Utah for 18 months between 2001 and 2002, he blogged to improve communications with his far-flung staff.

Good reasons all. Other reasons to blog:

- To establish your company, and yourself, as a thought leader on a subject
- Because you like to write
- To demystify your department
- To organize projects or topics without the clutter of e-mail

About the only bad reason to blog: "Don't blog because it sounds cool," says Debbie Weil, an online marketing and blogging consultant in Washington, D.C., and author of the upcoming *The Corporate Blogging Book*. She says an effective blog will have a clear focus.

2. Know your reader. No one wants to blog in a void. So you need to know who you would like to have read your blog, and why.

You might want to blog for your IT staff. Both Siegel and Weider decided to blog publicly instead of behind the company firewall to get extra input on their ideas.

On the other hand, if you're writing to explain the mysteries of IT to the rest of the company, you might want to keep your blog behind the firewall. Your tone and topics can be less guarded that way. And the posts your blog receives will tend to be less rancorous because corporate bloggers are more likely to post under their own names. This keeps posts from getting unruly. In a public blog, a C-level executive may want to review posts, if only to keep out spam.

Blogs also can be written by more than one person. Six Apart's Dash tells me that while everyone at his company has his or her own internal blog, these individual blogs are becoming less important. Instead, blogs are being organized around specific topics or even specific development projects, with multiple contributors. This makes sense to me.

3. Know the drill. You may be reluctant to blog because of the time commitment. Look at this comment from Tim O'Reilly, CEO of O'Reilly Media, a publisher and conference producer: "Blogging is migrating towards this whole attention economy vein. It's people who are effectively working on deadline to be the first to notice something. It really has become a very specialized job that you have to devote full time to. I can't afford to do that, so I blog on things that matter to me. And sometimes I don't do it for two weeks."

Tim posts regularly on his public blog, the O'Reilly Radar. But he has four other contributors to ease the pressure on him. Numerous blog watchers told me it's OK to post occasionally, as long as you're up front about your likely frequency.

The main reason blogging is a time-sink is there's no ghost-writing allowed. Witness George Clooney's objection to a post presented by Arianna Huffington as having been written by him—Huffington says she had assembled a "sample" post that was approved by Clooney's publicist.

Here's how they do it at IBM: "The first thing we tell execs is they've got to be authentic," says Christopher Barger, the blogging and podcasting communications lead at IBM. "You're not writing a white paper" or selling the company message. "But don't put stuff in your blog that you wouldn't put in an e-mail or say at a client dinner," he advises.

These strictures make it obvious to me why only one senior-level executive at IBM blogs, and that's idea fiend Irving Wladawsky-Berger. He posts about twice a week, often based on his speeches or his business experiences (such as when he realized he couldn't read his own blog while in China). Wladawsky-Berger's job is to look for new innovations and market trends, so blogging creates a dialogue for him with readers and can effectively be a feedback mechanism for his ideas.

I'll let you in on a little secret Debbie Weil told me: It's best for C-level executives to blog for a few weeks in the privacy of their own computer, to see if they even have time for a post a week. You might try that, perhaps even cutting and pasting something you wrote in an e-mail to practice writing in an informal voice. You could also send a couple of potential blog entries to people you trust, to see if they think the tone works. But know that once you're live, you probably won't be able to test out your entries before posting them.

Next, I'll talk about how not to wind up in *The Wall Street Journal* for all the wrong reasons.

Navigating the Blogosphere

Culture is everything for a blogger. Your blog needs to be yours, but it also can't be too different from your corporate culture. That's what I learned from Philip Windley, former CIO of the state of Utah, now associate professor of Computer Science at Brigham Young University. He started blogging in May 2002 and thought the blog would be a good way to exchange ideas.

But state government is not as free-wheeling as tech firms. If Windley posted something about his interest in enterprise instant messaging, much of his staff saw it as a directive to begin deploying the technology, rather than an invitation to discuss the idea.

He also discovered the hard way that blogging can create miscommunication and hurt morale. Windley encouraged his staff to blog, and one of his managers posted an entry about why an e-mail outage happened. The post was strictly factual, but the manager's staff felt betrayed by the publicity (other IT staff and some other government employees read it). Ultimately, that manager found it impossible to continue working with his staff and left his job. Oops.

To avoid these kinds of issues, Windley says, it's important to say why you're blogging in each of your posts, and to try not to say things that might generate calls from reporters.

Blog etiquette expert Margaret Mason advises executives to adopt the tone of their company in their blog. For a CIO at a youngish tech company, being very casual and hip might work. For a bank, street slang is off-limits.

Blogging isn't formal, but at most companies, business casual doesn't mean you can show up to the office in a tie-dye T-shirt, either. "Businesspeople treat blogging too informally," I learned from Sheryl Lindsell-Roberts, writing consultant and author of *Business Writing for Dummies*. "It's informal only in the sense that it's easy to post information. It's still a business form of communication."

Continued on Page 73

Your blog **needs to be yours**, but it also can't be **too different** from your **corporate culture**.

More About Blogging

For **LINKS TO ALL THE BLOGS** mentioned in this story, go to the online version of "Welcome to My Blog" at **www.cio.com/060106**.

CIO.com

CONTRARY TO POPULAR BELIEF, THE REAL POINT OF I.T. IS NOT TO OPTIMIZE YOUR APPLICATIONS.

THE REAL POINT IS TO OPTIMIZE YOUR BUSINESS.

When your I.T. department is busy with SAP ® and Oracle ® implementations, upgrades, and consolidations, sometimes it's hard to remember there is a reason for all this:

A business reason.

So the real question is: Can you equip your people to focus on business outcomes instead of I.T. outcomes?

Now you can. And we can help.

With Mercury BTO Enterprise™, the first software and services suite that helps I.T. ensure that their investments in applications produce the intended business outcomes.

Please call us at 1-866-379-7711 or visit mercury.com/erp.

We'd like to show you why thousands of customers use Mercury with their SAP and Oracle solutions.

CALL MERCURY AND ASK HOW YOU CAN OPTIMIZE I.T. FOR BUSINESS OUTCOMES.

MERCURY™

BUSINESS TECHNOLOGY OPTIMIZATION

© 2006 Mercury Interactive Corporation. All rights reserved. Mercury Interactive, the Mercury logo, Mercury and Mercury BTO Enterprise are trademarks of Mercury Interactive Corporation and may be registered in certain jurisdictions. All other company, brand, and product names are marks of their respective holders.

August 20-22, 2006
Hotel Del Coronado
Coronado, California

8th Annual

CIO100

SYMPOSIUM & AWARDS CEREMONY

DELIVERING INNOVATION TO THE ENTERPRISE

CIO 100 Symposium is the premier place for CIOs to exchange ideas with their peers across all industry segments as noted thought mavens and recognized leaders in the CIO community explore how to develop, implement and capitalize on innovation most effectively.

To register or for more information

call 800.355.0246 or visit
www.cio.com/conferences

SESSION HIGHLIGHTS

Where's the Next Wave of IT Innovation Coming From?

If innovation is the key to the future, where are our next innovators going to come from and how will that affect businesses here and around the world?

Tapping Internal Creativity

Approaches to innovation can be as varied as the initiatives it produces. Foster creative thinking and your employees will provide original ideas and pioneer new products. Hear from CIO 100 winners who discovered and developed their internal innovation sources.

HOT TOPIC

SOA—Are You Ready?

Service-oriented architecture (SOA) allows IT to respond quickly to new business needs to deliver applications in real time, or on demand. Discuss the latest developments and implementation strategies with this leader in the field.

Why Not "Not Invented Here"?

Innovation labs, design firms and consultants are playing an increasingly large role in the pursuit of innovative ideas. For many companies the once firmly held belief that innovation had to be homegrown is falling by the wayside. Learn how this company is maximizing their outsourcing partnerships, realizing a new way of doing business and generating innovation from outside the company.

Oh, And One More Thing.....

What is it? What is the one thing more you need to know, learn and take away from this experience? Here from an innovation guru on just what that one more thing might be.

WHO SHOULD ATTEND

Leaders in the CIO community, who want to explore how to develop, implement and capitalize on innovation.

In other words, you.

14th annual
CIO 100 Awards Ceremony

INNOVATION TAKES CENTER STAGE

Celebrate 100 winners with 100 innovative technology solutions that revolutionized 100 world class organizations.

Register Now.
www.cio.com/conferences

CIO 100 Symposium & Awards **Welcome to the Conversation.**

CIO 100 Symposium Awards are proudly underwritten by

intel · cingular WIRELESS · SYBASE

Official Host Sponsors

BlackBerry — WIRELESS DEVICES

iRise — VISUALIZE. INNOVATE. DELIVER™ — APPLICATION DEFINITION SOFTWARE

redhat — OPEN SOURCE

symantec. — SECURITY

Sponsored by

EDS · INTERWOVEN · Microsoft Executive Circle · Satyam — What Business Demands.

Presented by

CIO Business Technology Leadership

It's OK to show off to your friends that you were in CIO.

But it's even better to show your customers.

What better way to inform your key customers of your editorial coverage in *CIO* than through customized Editorial Reprints?

Leverage the positive impact of your editorial coverage by using reprints for direct mail campaigns, seminar promotions, employee communications, recruiting and marketing programs. Let us enhance your reprints with your company's logo, address, and sales message. Reprints make great SALES tools for trade shows, mailings or media kits.

And while a framed copy of your article will look neat on your wall, it will look even better in the hands of your customers.

CIO

Business Technology Leadership

PARS Publishers Ancillary Revenue Services
INTERNATIONAL CORP.
MANAGED REPRINT PROGRAMS

For more information on customized editorial reprints in volume quantities, contact Jennifer Eclipse at 212.221.9595 x237 or email jeclipse@parsintl.com. Website: www.magreprints.com/quickquote.asp

"I don't think you can separate your opinions from your place of work," Weider told me. "I'm an executive here, and what I say reflects on the operation."

Weider calls his blog The CandidCIO, but he's not candid about everything. He doesn't comment about where he thinks his competitors are wrong. He does not ding his vendors. And he does not mention his staff. Those all seem like good guidelines to me.

But he doesn't avoid controversy: When a vendor offered him an all-expense-paid trip for two to a World Cup game in Germany, he put it in his blog and named the vendor, Avaya. That caused a stir, and even some press coverage. Weider says their working relationship remains strong. Avaya, though, makes a point of no longer paying for lunch.

People do get fired for blog posts. In fact, it has its own slang term—getting "dooced," named for blogger Heather Armstrong, who uses the pseudonym "Dooce" online, and was fired for satirizing her employer in her blog. Others who've been dooced:

- A Google employee who was critical of his employer
- A Web developer at Friendster who wrote about her work
- A librarian who blogged about copying music

Some Final Tips

- **Keep it short.** And skimmable.
- **Get thick skin.** Know that your blog will generate comments you might not want to hear. They might even be true. Be ready for them, and acknowledge them when it's appropriate.
- **Blogs are forever, or reasonably close to it.** Remember that blogs are permanent and searchable. If your blog is public, it's available via Google or Technorati or some other search site. I wouldn't swear, or share my thoughts about religion or politics. Or the food in the cafeteria, as one of Lindsell-Robert's clients did.
- **Check grammar and spelling.** Natasha Terk, a partner in Write It Well, an Oakland, Calif., writing consultancy, reminds me that sloppiness reflects poorly on me and my company.
- **The rules can be broken.** I call this Schwartz's Law, after Jonathan Schwartz, the new CEO of Sun Microsystems. More than one person has told me that Schwartz succeeds by breaking the rules. He manages to slash and burn his way through all the conventions—needling rivals like IBM, HP and Dell, chiding California Gov. Arnold Schwarzenegger for using taxpayer money on something that can only be viewed in Windows Media Player, thumping his chest over Sun products, recounting a family vacation—and still get away with it. (It helps that Schwartz is a good writer.)

For most of us, blogs present a much smaller soap box. But they're a useful platform, and one worth getting comfortable standing on. CIO

Resources for New Bloggers

Books

Weblog Handbook
By Rebecca Blood

Naked Conversations: How Blogs Are Changing the Way Businesses Talk with Customers
By Shel Israel and Robert Scoble

Blogging for Dummies
By Brad Hill

Blogs

Debbie Weil's BlogWrite for CEOs
www.blogwriteforceos.com

Business Blog Consulting
www.businessblogconsulting.com

–M.F.

Michael Fitzgerald is a freelance writer in Millis, Mass. He can be reached at *michael@mffitzgerald.com*. Send feedback about this story to Executive Editor Elana Varon at *evaron@cio.com*.

REDUCE I.T. COMPLEXITY NOW!

theITevolution.com

Access a new IDG Web site providing I.T. executives with exclusive IDG and IDC Insights into optimization and strategies to tame growing I.T. complexities

IDG

FLEXIBILITY
INTEGRATION
SECURITY
OPEN STANDARDS
OPTIMIZATION

IDC Featured Content:
> Executive Briefs
> Executive Insights
> Analyst Blogs
> Analyst Videos

IDC
Analyze the Future

theITevolution.com

SPONSORED BY:

IBM®

A

Red Lion Hotels installed voice recognition software to cut costs and improve customer service, says CIO **David Barbieri**.

Everyone's had a bad experience with a call center. But now companies are investing in advanced technologies and at-home agents to connect with customers, not put them on hold.

nswering

With a corded phone clutched in one hand and a spatula in the other, the man gazes anxiously at a piece of meat sizzling on his stove. He's on the line with his credit card company, but instead of speaking with a live human, he's stuck in a series of automated prompts. Even as his dinner bursts into flames, he's unwilling to let go of his phone for fear he'll miss a chance to speak with the next available agent. He tries to put out his flaming dinner with a broom, only to have the broom catch fire.

This telling exchange between caller and company—part of Citibank's "Simplicity" card ad campaign—isn't just a clever send-up of a common customer service problem. It also reflects growing frustration with automated self-service applications that don't work. Citibank's response is the "dial 0" campaign, which stresses that it's easy to call its 800 number and find a real human being. But while Citibank proclaims it will no longer trap callers in an automated loop, most companies are still struggling to improve clunky call center technology that can make it hard to get quick and efficient service.

- How CIOs can champion customer service within their organization
- How to boost caller satisfaction with your company's contact center
- The pros and cons of VoIP

BY SUSANNAH PATTON

PHOTO BY GARY BENSON

Organizations that are listening to customer frustration are responding in several key ways: by updating call center technology, by making it easier to reach a human agent if necessary and—in some cases—by moving from far-flung call center agents to at-home customer service representatives. This strategic about-face marks the emergence of a new breed of call center—one that employs technology to connect with its customers, not put them on hold. It also represents a pull back from a trend that started five years ago, when industry leaders such as Dell and General Electric sent their call centers offshore and automated as many calls as possible to cut costs. Companies achieved substantial savings with these tactics, but first-generation touch-tone systems were cumbersome for customers to use and offshore agents were sometimes hard for callers to understand. The result? Customer backlash.

Recent surveys show Americans are vastly dissatisfied with the service they get when they call their bank or computer help desk. Now, forward-thinking companies are realizing that, while they still want to save money, they need to focus more on satisfying customers or risk losing them in droves. To improve communication while reducing cost, they are integrating the existing call center model with newer technologies. These range from voice over IP (VoIP), which makes it easier to oversee a remote workforce but poses some technical challenges for early adopters, to software that sends easy-to-answer calls to an interactive voice response (IVR) system while connecting the most valued customers with complex requests to highly trained agents.

Customers are a company's most vital asset. For that reason, CIOs need to know about technology that can help their companies improve customer applications and satisfaction. While contact centers are often managed by operations staff, CIOs generally maintain the networks and the systems that run them. They can also be in charge of purchasing and implementing new technologies such as voice recognition, work management systems that track agent schedules, and CRM applications that provide easy access to customer information. Clearly, the CIO can play a key role in fine-tuning call center service.

"All the technologies we need for the next generation of call centers are with us today," says Steve Boyer, CIO of call center outsourcer StarTek. "It's a matter of figuring out how to integrate them, adapt them and use them to attract and keep customers."

The Call Center Grows Up

Shortly after Alexander Graham Bell invented the telephone in 1876, he offered to sell his device to telegraph giant Western Union. Western Union declined and wrote in an internal memo that, "This telephone has too many shortcomings to be seriously considered as a means of communication."

Western Union was wrong, of course, and companies soon saw the new contraption as an excellent way to communicate with customers. As early as the 1920s, phones started appearing on the desks of those whose primary duty was to deal with customers, setting the stage for the advertising cliché, "Our operators are standing by." Phone agents didn't really take off, however, until 1967, when AT&T developed the toll-free 800 service that reversed charges from customers to the companies they were calling. Soon after, the Federal Communications Commission ruled that equipment made by businesses other than the Bell System could be connected to the public telephone system. The decision opened the door for competing companies to develop technologies such as the modern PBX, IVR systems and automatic call distribution systems, which made it easier for businesses to handle large call volumes at a more reasonable cost.

Companies must focus not just on how fast the call is answered, but on what happens after it is answered.

As telecommunications technologies advanced, U.S. call centers boomed. Datamonitor estimated that in 1998 there were 69,500 call centers nationwide. By the late 1990s, however, major corporations sought to cut customer service costs and began to investigate how to save money by moving call centers offshore.

In one of the earliest high-profile announcements, Dell said in July 2000 that it would open a call center in Bangalore, India, and signed on with outsourcer Tata Infotech. Other companies in the United States and abroad followed suit, and the Indian call center industry took off, followed by similar developments in the Philippines, Latin America and beyond.

Customer Dissatisfaction

Customers have been less enthusiastic about offshoring. Many complained that it was hard to communicate with foreign operators due to their accents, and that scripted answers left them frustrated. A political backlash against offshoring ensued, one reason Dell announced in 2003 that it would bring technical support calls for business customers back to the United States. Dell did follow through on the move. But in March it announced plans to double its Indian workforce to 20,000 over the next three years, a figure that likely includes some call center workers.

Technology hasn't been a cure-all for customer satisfaction, either. The widespread use of technologies such as voice recognition software and IVRs also left some callers alienated and unhappy. A 2005 study by Opinion Research found just 35 percent of those surveyed said call centers fully met their expectations.

Despite customer grumbling, companies are not giving up on automation. In fact, the call center of the future will likely be highly automated and globally dispersed. The offshore call center industry is growing and companies continue adopting voice recognition, IVRs and other technologies to help them answer basic questions for less

Information, Please A critical glossary of call center technologies

Automatic call distributor: ACD telephone systems register incoming calls and handle them according to a database of instructions. Companies can use ACDs to validate callers and route them to the right agent.

Computer telephony integration: CTI integrates disparate call center systems and provides to agents' desktops useful customer information. A typical desktop CTI application may recognize a customer's phone number when the call comes into the PBX or IP line, access the customer's purchasing history from the host computer and display the information to the agent.

Interactive voice response: IVR systems allow touch-tone phones to interact with a database.

Speech recognition: Software that allows companies to automate calls that don't require a human agent. Early speech recognition applications didn't always work well, but newer versions are proving more accurate.

Voice over IP: VoIP sends voice signals over data lines instead of phone lines. Call centers and outsourcers are adopting the technology to better handle routing and call volume; it can send calls to an agent anywhere in the world. VoIP does pose some security risks and quality of service concerns.

Workforce management: Also known as job scheduling, workforce management software uses projected call levels to forecast the number of on-duty agents needed at a given time. *–S.P.*

money. It's easy to see why: Transactions that cost $2 to $10 when handled by a human agent cost only 2 cents to 20 cents when automated, according to McKinsey & Co. Today, 79 percent of North American enterprises and at least 50 percent of European companies have IVRs, according to Forrester Research.

Forrester's report also notes that replacing traditional touch-tone IVRs with some speech recognition technologies provides greater flexibility for companies trying to encourage customer self-service. To avoid caller frustration, however, companies must also make human help available as needed. And despite complaints, the automated agent, or IVR, is catching on as callers get acclimated to such services, analysts say. In fact, according to McKinsey, more than 60 percent of customers favor an automated option for simple interactions.

To ensure good customer service, however, companies must focus not just on how fast the call is answered, but on what happens *after* it is answered. "If you're outsourcing and putting in new technologies just to lower costs, you can run into problems," says Elizabeth Herrell, VP in the telecom and networks research group at Forrester. "It's not the automation or the outsourcing that's the problem—it's the lack of time spent on the details."

She stresses there is no one-size-fits-all solution to meeting customer demands while saving money in call center operations. The call center of the future, she notes, won't follow a uniform model—some agents will answer calls in large contact facilities, while at-home agents will be hired as needed during busy periods to provide flexibility. Companies need to try different technologies and tactics while improving agent and supervisor training and tracking customer satisfaction with real-time surveys. "Customers will be unhappy when they can't get information or when a system doesn't understand them," Herrell says.

Your Call Is Important to Us

There's no denying that automating some calls can save a lot of money for a company and enhance service by helping callers get information such as flight times quickly. However, the investment in newer technologies such as speech recognition solutions can range from a few hundred thousand dollars to more than a million dollars, Herrell notes. The ROI from such investments can come quickly if businesses can answer more calls and avoid putting callers on long hold loops. That's why companies such as Red Lion Hotels and Countrywide Financial are investing in voice recognition software and other tools that can automate some of their calls.

Red Lion, with annual revenue of $165 million in 2005, is installing such software as a way to save money and provide some self-service for customers seeking simple information like a reservation confirmation. It also hopes to handle unexpected surges in call volumes with automation.

The hospitality and leisure chain doesn't outsource its contact centers. It employs its own agents at a primary call center for hotels in Spokane, Wash., and it has two others for its ticketing operations. But call volumes can be unpredictable, says David Barbieri, Red Lion's CIO. During peak times, customers looking to make a hotel reservation or to buy tickets through the concert and event service would sometimes go into an "on hold" loop if an agent wasn't available. Red Lion was concerned that customers left on hold were likely to hang up and try a competitor.

With Voxify's voice recognition software, Barbieri expects to handle sudden volume peaks without losing calls. "It's important the technology works and works quickly so that customers can have a stress-free interaction," he says.

Barbieri also expects to save $300,000 a year by installing the software, which will go live in stages this year. He is in the process of developing application program interfaces that will link Voxify's hosted voice recognition service to his two core systems that handle reservation and ticketing transactions. Barbieri estimates that about 75 percent of the company's ticketing calls can be handled with voice recognition in the future. However, callers can request an agent anytime by pressing "0."

Experts agree that voice recognition has advanced to the point where it can be an important part of the call center. "But the key is not to penalize the caller when they want to talk to a human," says David Brandon, senior technical call center consultant for Forsythe Solutions Group.

Two years ago voice recognition software replaced touch-tone IVR applications that frustrated callers at Countrywide

Financial, a $15.7 billion specialist in home loans and diversified financial services. The result, says Lior Ofir, Countrywide's first vice president for emerging technology, is improved performance with more customers completing transactions. The software from Nuance has helped the company achieve a return of more than 300 percent on its $4.5 million investment over the past two years, says Ofir. Still, Ofir knows it's important to give customers the option of speaking with a live person, especially if they're doing a complex transaction.

"We don't believe in hiding the agents," says Ofir, whose group implements new technologies for the company's U.S. call centers. "The goal is to give our customers a clear choice." The new system, he says, recognizes about 300 variations of a request to speak with an agent, ranging from "I want to speak to a human" to "agent." Callers can also press "0" to connect to a customer service representative or the operator. In addition, Ofir says, the system uses voice analysis to detect when callers are having trouble and will then automatically switch them to an agent.

You Can Go Home Again

While U.S. companies such as Red Lion and Countrywide seek to boost service and cut costs through careful use of automation, others are banking on the human touch. In addition to newer technologies, they are experimenting with the ultimate virtual call center—agents working from their homes in North America.

Companies including Office Depot, Vermont Teddy Bear and JetBlue already use hundreds of home-based customer service agents across the United States and Canada. Home agents don't always replace offshore call centers at these companies. Instead—as in the case of Vermont Teddy Bear—they serve as extra manpower that swoops in during holidays or seasonal business peaks. They give a company flexibility to handle unusually busy days or even hours. In fact, the number of home-based agents is expected to triple to 300,000 by 2010, says Stephen Loynd, a senior analyst at IDC.

Loynd says one reason the trend—which he has dubbed "home-shoring"—is taking off is because it's cheaper than outsourcing to a domestic call center. Newer technologies also mean the call center is becoming increasingly virtual. IDC estimates that it costs $31 per employee per hour (including overhead and training) to operate a traditional call center in the United States, but only $21 per hour for a home-based agent. That's still higher than rates for offshore agents, which start at $10 per hour in the developing countries of Southeast Asia and Eastern Europe, according to Forrester Research.

On the plus side, at-home agents are generally older and better educated, Loynd

Customers need the ability to reach a live agent during complex transactions, says Countrywide Financial VP **Lior Ofir**.

PHOTO BY [illegible]

TATA

WHERE DO 7 OF THE TOP 10 FORTUNE 100®
TURN FOR THEIR I.T. NEEDS?

TO THE BIGGEST I.T. COMPANY YOU'VE PROBABLY NEVER HEARD OF...

Presenting Tata Consultancy Services, TCS, the creator of the Network Delivery Model for software development. For over 35 years TCS has been the provider of choice for hundreds of customers around the globe, including seven of the top ten FORTUNE 100® companies. TCS, with revenues of $2.97 billion in FY 2005/06, serves its customers with over 63,000 expert associates from 53 countries around the globe, including 9,000 employees in 50 locations throughout the U.S.

It's time you got to know the biggest I.T. company you've probably never heard of. For a more complete introduction, email marketing@usa-tcs.com or visit us online at www.tcs.com.

TATA CONSULTANCY SERVICES

I.T. Services / Business Solutions / Outsourcing

© 2006 Tata Consultancy Services Ltd. All rights reserved. Tata Consultancy Services and the Tata Consultancy Services logo are registered trademarks of Tata Consultancy Services Ltd.

says. "If you have enthusiastic, hardworking agents with a flexible work schedule, they'll be better on the phone," he says. They're also more likely to stick around. While some traditional call centers report attrition rates of 80 percent to 100 percent annually, outsourcer Willow CSN (which uses only home-based agents) claims an annual attrition rate of just 15 percent.

Vermont Teddy Bear agrees that home-based agents can boost customer satisfaction, although it won't divulge actual figures. The company, which reported annual revenue of $66 million in 2005, doesn't automate its calls or use offshore agents. Instead, it operates a small call center in Shelburne, Vt. In addition, it has used home agents from outsourcer Alpine Access since 2000. Most of the time, says contact center manager Chris Powell, the center's 170 seats are not filled. But the maker of handcrafted bears experiences major peaks in business during holidays such as Valentine's Day and Mother's Day and can go from 50 agents to 700 on its busiest days. At these times, home agents help the company respond to orders and shorten customer waits.

Powell says the ability to staff up for short periods of time was more important than cost in the company's decision to add home agents to its call center strategy. But judging by the average per-order conversion rate (the number of orders per call), home agents excel, Powell says. Last Valentine's Day, he notes, the home-based agents came in ahead of those in the call center in their conversion rates. Alpine's agents, he says, have a 1 percent to 2 percent higher conversion rate, meaning that if the average order is $100, the at-home agents are bringing in an extra $200 for every 100 calls. "It would appear that you get a higher quality agent for a reasonable price," Powell says.

The Virtual Call Center

To make sure customers can get 24/7 service, companies rely on agents worldwide. But routing calls and managing a global workforce presents it own set of challenges including making sure that round-the-clock scheduling runs smoothly.

One way to manage agents and route calls from a central location is to use VoIP technology to replace traditional phone systems. VoIP was originally touted for its ability to help companies cut long-distance costs. Now, for call center operators, it promises a greater ability to oversee a disparate workforce.

VoIP works by converting a voice signal from the telephone into a digital signal that travels over the Internet. Companies save money with reduced long-distance charges and elimination of individual phone lines since all voice and data travels over the Internet. The technology, however, is in its early stages of adoption and users have to overcome security vulnerabilities and quality of service hurdles. For example, calls that travel over data lines can be subject to Internet worms and viruses.

Still, outsourcers such as ClientLogic, Mphasis, TeleTech Holdings and others are installing IP phone lines in their contact centers. They say the advantages of being able to administer the system centrally outweigh the challenges. "With an IP phone, agents can be anywhere—at home or at a physical site—and we can route calls to them from a central location," says David Eckert, CIO at ClientLogic.

"If you're doing it just for the cost, you're fooling yourself," says Mojgan Lefebvre, international CIO at TeleTech. "The driving force should be to have 24-hour support service, multimedia contact centers with Web, e-mail or voice. That's easier with VoIP."

Analysts also point out that VoIP eliminates the need for call center managers to integrate voice and data networks, as they do in traditional call centers. Companies don't have to run separate infrastructures for automatic call distribution and IVR applications. VoIP also supports agents regardless of location because it's not necessary to have the traditional telecommunications equipment at each call center.

> **"What's crucial is taking care of the customer. If you don't, they'll just move to the next company in the phone book."**
>
> –STEVE POPPE, CIO, ROTO-ROOTER

For Roto-Rooter, VoIP helped create a system in which there are few service interruptions or delays in answering calls, says CIO Steve Poppe. In the past, the emergency plumbing company had "mini call centers" in each metro area it served, which meant agents could get backed up and callers might stay on hold. Now, three call centers in Baltimore, Chicago and Fort Lauderdale, Fla., take a million calls a year.

With VoIP, the regional centers are better equipped to handle peaks in call traffic. If there is a problem in one center, for example, the system automatically routes callers to the next available agent, wherever that agent may be.

Since installing voice over IP at the centralized call centers about two years ago, Poppe says fewer calls are dropped. "We're doing a better job of capturing every call," he says.

Poppe foresees a time when the highly trained Roto-Rooter agents will work from home as well as the company's call centers. "The location of the agent is not important," he says. "What's crucial is taking care of the customer. If you don't, they'll just move to the next company in the phone book." CIO

Learn More

Get tips for **IMPROVING CUSTOMERS' CALL CENTER SATISFACTION** and read a Q&A with a home-based agent at **www.cio.com/060106**.

CIO.com

Senior Writer Susannah Patton can be reached via e-mail at *spatton@cio.com*.

**YOUR JOB IS TO KEEP SYSTEMS AND APPLICATIONS RUNNING.
OUR MISSION IS TO KEEP PEOPLE AND INFORMATION CONNECTED.
LET'S WORK TOGETHER.**

Continuous access to information no matter what. That's Information Availability. It's what your employees, suppliers and customers demand every minute of every day. But to deliver it flawlessly, you need a massive global infrastructure, redundant systems and diverse networks being monitored and supported by skilled technical experts at secure facilities. That's exactly what SunGard provides.

As a result, we can offer you a higher level of availability and save your company, on average, 25%* versus building the infrastructure yourself. Plus, it's a vendor neutral solution that lets you control your data, applications and network while giving you the flexibility to adjust to the changing needs of your business. But best of all, it lets you spend more time solving business problems and less time solving technical problems.

For years, companies around the world have turned to SunGard to restore their systems when something went wrong. So, it's not surprising that they're now turning to us to mitigate risk and make sure they never go down in the first place.

You want your network and systems to always be up and running. We want the same thing. Let's get together. To learn more, contact us at 1-800-468-7483 or go to www.availability.sungard.com/masteria and get your free copy of the book "Mastering Information Availability."

SUNGARD® Availability Services | Keeping **People** and **Information** *Connected.*™

*Potential savings based on IDC White Paper, Ensuring Information Availability: Aligning Customer Needs with an Optimal Investment Strategy.

Making IT Portfolio Management a Reality

Among IT buzzwords, *portfolio management* is used so commonly that it hardly needs definition. This magazine has been writing about it since 1998. Analysts preach that managing technology investments as one would a financial portfolio is the surest way to maximize value, ensure alignment with the business and minimize risk. Consequently, software vendors are forever pushing products that promise holistic, color-coded views of the IT portfolio that they say will enable CIOs to prioritize projects; simplify and automate the processes for project approval, planning, resource allocation and project tracking; and standardize metrics for measuring ROI.

Some may even make breakfast for you.

But despite all those promises, many CIOs say their portfolio management efforts are still works in progress. CIO Executive Council members share that sentiment, noting that portfolio management is hardly a been-there-done-that subject. Here they share lessons they've learned along the way.

JERRY HALE
Eastman Chemical

1] Create a PM-friendly environment. Portfolio management is, at its simplest, a method of prioritizing IT projects. But successful prioritization requires both ongoing adjustments based on shifting business demands as well as a way to evaluate whether projects have delivered the anticipated ROI. "The portfolio management process will not work unless you've a strong support system established around it," says Jerry Hale, VP and CIO at Eastman Chemical.

For Hale, that meant setting up an IT program office responsible for financial and project management, the portfolio management process, and a team of relationship managers dedicated to helping business units make the most out of IT's capabilities. Hale also set up a governance council, made up of representatives from all functions and business units. Each council member heads up an oversight team that prioritizes IT projects within its respective business unit or function.

This infrastructure has made Eastman Chemical's portfolio management efforts successful. There's been an increased commitment to and ownership of projects from the business side, which has helped IT focus more on high-value projects. As a result, Eastman Chemical has been able to shift some IT staff away from application development.

2] First progress, then perfection. What should you do if you don't have these portfolio

CLOSE-UP

A License to Kill...Projects

What to do when your project is not delivering the promised value

Effective portfolio management means being willing—and able—to kill projects that have been delayed, are not delivering promised value or no longer fit the company's strategic direction. In the city of Chandler, Ariz., CIO Marilyn Delmont explicitly gives the city's IT Oversight Committee (ITOC) responsibility for terminating projects, and spells out that the committee is responsible for more than just project selection.

ITOC considers a project for termination if it is more than 20 percent over budget or 30 to 60 days behind schedule. (Delmont's group will be rolling out Clarity portfolio management software from Computer Associates, enabling them to run reports and get fine-tuned indicators of when a project is in trouble.) After ITOC got the green light to terminate projects, it killed three that had been on the books for three or four years, Delmont says, and afterward, two projects that had been stalled were able to move forward.

THE ESSENTIAL ELEMENTS OF

IT GOVERNANCE

Even the most effective strategy and leadership need the right data to support them. Compuware Changepoint provides the fundamental components for better decision-making. While Changepoint automates key organizational processes, you get an integrated dashboard view of IT costs, effort and value with the power to drill down for details. Hard facts delivered on demand—now that's putting true IT insight in the palm of your hand.

Discover the "Total Economic Impact" of implementing IT Governance. Download the latest Compuware-commissioned case study conducted by Forrester Consulting at www.compuware.com/Changepoint/ROI3. Or, visit us at http://www.compuware.com/it-governance/.

COMPUWARE®

[TOOLS WE USE]

CHOOSE YOUR TOOL

Two CIOs weigh in with their tool of choice

JOE KRAUS, FORMER SENIOR VP AND CIO, INTELSAT

Kraus uses standard office productivity tools for prioritizing and tracking the IT portfolio and communicating its status. Intelsat is a midsize company with 2004 revenue of $1.04 billion, so Kraus likes to keep things simple. "One of the things I'm trying to do is get rid of stuff," Kraus says. "Bringing in an enterprise tool that everybody uses wouldn't be a prudent thing to do at this time." Kraus's team talked about building an online tool so that all the VPs could see the status of projects in the portfolio; he decided that such a tool was unnecessary. "I'm not General Motors," Kraus says. "I can walk down to the office of any VP and have a conversation."

WALTER WEIR, CIO, UNIVERSITY OF NEBRASKA

For the past six years, Weir has used a portfolio management tool from ProSight that gives him a dashboard view of his IT portfolio.

"The tool takes information that used to be in the black box—and was often misunderstood—and makes it so that it can be very quickly displayed, so you can have a meaningful conversation with your senior administrators," Weir says. "They look at the dashboard and say, 'That's an awfully big yellow bubble. What's happening there?'" Weir has built a prototype showing how the university could use the tool—and the portfolio management approach—to prioritize and track progress toward broad strategic initiatives that reach far beyond IT. For example, he says, "the University of Nebraska should provide the opportunity for Nebraskans to enjoy a better life through access to high-quality higher education."

Portfolio Management

Continued from Page 82

management-enabling IT governance elements in place? "Create a wireframe of what IT governance should be," says Lars Rabbe, CIO of Yahoo. "Identify the most critical functions and start implementing lightweight processes for those functions."

For Rabbe, the most important thing was establishing an office with staff dedicated to managing the IT portfolio (project prioritization and resource allocation) and the IT production environment (schedules and budgets).

Once key governance structures are in place, portfolio management typically involves some administrative work. But Alan Levine, CIO at The Kennedy Center for Performing Arts, advises peers to make sure they don't overwhelm people with new processes and policies. He found out the hard way, creating project justification forms that gathered information on costs, risks, benefits and so on, and he made a policy that IT would work only on projects that had been through this process. "[But] folks saw this as more bureaucracy," he explains. So Levine is setting a threshold for the size of a project that needs a full review; smaller projects will be streamlined.

3] Maintain momentum on the business side. Once you've gotten business executives interested in taking a companywide view of technology investments, a major hurdle is maintaining their interest. "Very often IT councils form and then fall apart because people get distracted," says Joe Kraus, former senior VP and CIO at Intelsat.

Regular meetings were key to maintaining the momentum of Intelsat's Demand Management Council (a group of VPs who represent the operational and business groups that make the most use of technology services). When Kraus was developing Intelsat's first IT road map, the council met once a month. But that wasn't enough to bring closure on pending decisions and finalize the master schedule, so Kraus began scheduling the meetings twice a month.

"[By meeting more frequently], we were able to initiate several projects sooner and consequently achieve the associated benefits sooner," he says. The VPs supported the increase in meetings, he adds, because they had a vested interest in seeing projects move forward. Once Kraus finished the road map, the council moved back to a monthly schedule.

The meetings are a forum for presenting new project justifications, setting portfolio priorities, settling resource debates, discussing project status and rescuing projects that have gone "off in the weeds." Kraus does not use a formal project scoring methodology for new projects. But he is working on adding a project postmortem component to the council's work.

Having a regular venue for discussing IT priorities has improved communication between IT and the business—and communication among business groups, Kraus says. But his efforts to engage the business and align the IT portfolio will need to continue. "It's never going to be like, We're done, and everybody's sitting around the table singing 'Kumbaya,'" Kraus says. "It's an ongoing effort to pull people into the circle and educate them." CIO

Sari Kalin is a freelance writer based in Arlington, Mass. Send comments about this article to *letters@cio.com*.

The CIO Executive Council is a professional organization for CIOs founded by CIO's publisher. To learn more about the Council, visit *www.cioexecutivecouncil.com* or contact Vice President of Development Dexter Siglin at *dsiglin@cio.com* or 508 935-4493.

You don't face the same project and resource management challenges as everyone else. So why use one-size-fits-all software?

Only Primavera has a complete range of industry-specific, collaborative project, resource and portfolio management solutions for your unique business needs. We're currently helping companies around the world successfully manage their projects and resources, even in the most complex regulatory and compliance environments. We can help you do the same. Whatever your challenges, you can rely on one name for the right solution. And that's Primavera.

Find out why Primavera was named a PPM Market Leader by a leading independent analyst firm.
Visit www.primavera.com/PPMWave today!

CIO

SALES AND SERVICES

CIO SALES OFFICES

President and CEO
Michael Friedenberg
508 935-4310

Publisher
Gary J. Beach
508 935-4202

EAST COAST

VP Sales, East
Bob Bragdon
508 935-4443

Regional Sales Manager
Ellie St. Louis
201 634-2332

NEW ENGLAND

Senior District Sales Manager
Andrew Haney
508 935-4586

Sales Operations Manager
Dawn Cora
508 935-4092
Fax • 508 879-6063

NORTH CENTRAL

Regional Sales Manager, Southwest
Beth DeVillez
847 759-2727

Advertising Sales Associate
Kim Giovanni
847 759-2728
Fax • 847 759-2729

WEST COAST

VP Sales, West
Bob Melk • 415 975-2685

Senior Regional Sales Manager
Ai Collins • 415 975-2686

Regional Sales Manager
Kevin Ebmeyer • 415 975-2684

Account Executive
Derek Jung • 415 975-2683
Fax • 415 543-2358

Senior Account Executive
Sara Mascall • 415 978-3385

Ad Sales Associate
Devon Slattery • 415 975-2687

SOUTHERN CALIFORNIA

Regional Sales Manager
Kevin Ebmeyer • 415 975-2684

ONLINE SERVICES

VP, Integrated Media and Online Sales
Jim Alla • 508 988-6763

Western Online Sales Manager
Jennell Hicks • 415 243-8585

Online Account Executive
Danielle Tetreault
508 988-7969

Online Client Services Specialist
Valerie Sumner • 508 988-7877

Online Sales Administrator
Anne Butera • 508 988-6823

CUSTOM PUBLISHING

VP of Program Development, IDG
Charles Lee • 212 867-1229

VP, Integrated Media and Online Sales
Jim Alla • 508 988-6763

Director of Sales
Mary Gregory • 508 988-6765

Executive Editor and Director of Operations Tom Field

Director, Integrated Project Management Mo Barrett

Managing Editor Jim Malone

Senior Project Manager
Amy Greenleaf

Project Managers
Karen Capland,
Jon Heinrich

LIST SERVICES

Contact Paul Capone of IDG List Services at 508 370-0865 or *pcapone@idglist.com*.

REPRINT SERVICES

For article reprints (100 quantity or more), please contact Jennifer Eclipse at PARS International at 212 221-9595 x237 or via e-mail at *jeclipse@parsintl.com*.

***CIO* is published in the U.S. as well as in:**

Australia, CIO Australia
www.idg.com.au
Canada, CIO Canada
cio.itworldcanada.com
China, CEO & CIO China
www.ceocio.com.cn
France, CIO France
www.idg.fr/cio
Germany, CIO Germany
www.cio.de
India, CIO India
91-80-521-0309/12
Japan, CIO Japan
www.idg.co.jp
The Netherlands,
CIO Netherlands *www.cio.nl*
New Zealand, CIO New Zealand
www.idg.co.nz
Norway,
CIO Business Standard
www.business-standard.no
Poland,
CXO Poland *www.cxo.pl*
Singapore, CIO ACEN/
Hong-Kong *www.idg.com.sg*
South Korea, CIO Korea
www.cio.seoul.kr
Sweden, CIO Sweden
www.cio.idg.se

For further sales information:
www2.cio.com/marketing/aboutcio/contacts.cfm

INDEX OF COMPANIES AND ADVERTISERS

Page numbers refer to the first page of the article(s) in which the company has a substantial mention.
This index is provided as a service to readers. The publisher does not assume any liability for errors or omissions.

COMPANY INDEX

A.G Edwards & Sons Inc. 54
Aegis Mortgage Corp. 32
Affinity Health System 66
Allianz 21
Alpine Access Inc. 74
Amalgamated Life Insurance Co. 21
Argonaut Group Inc. 21
AT&T Inc. 74
BearingPoint Inc. 12
BOK Financial Corp. 32
Capgemini 54
Carnival Cruise Lines 32
Citigroup Inc. 74
ClientLogic Corp. 74
Computer Associates 12
Countrywide Financial Corp. 74
Datamonitor plc 74
Dell Inc. 74
Eastman Chemical Co. 82
Forrester Research Inc. 21
Forsythe Technology Inc. 74
Gartner Inc. 12
Hunton & Williams Llp. 46
General Electric Co. 74
GlassHouse Technologies Inc. 54
IDC Research Inc. 74
Intellilink Solutions Inc. 54
Intelsat 82
JetBlue Airways Corp. 74
Littelfuse Inc. 32
McKinsey & Company 74
Microsoft Corp. 54

ADVERTISER INDEX

AT&T 64, 65
Audio Visual Innovations 87
Citrix Systems Inc. 53
Cognos Inc. 45
Compuware Corp. 83
CXO Media Inc. 33, 41, 70, 72
Dell Inc. 20
EMC² Corp. 27
ESRI 17
Fujitsu Computer Systems Corp. 51
Global Crossing 6
Hewlett-Packard Co. (regional) 5
Hyperion Solutions Corp. 19
IBM Corp. C3, 36, 60, 73
Information Builders 25
Integrien Corp. 32a
Intel Corp. 11
Internet Security Systems 15
Iowa Department of Economic Development 63
Manpower Inc. 13
Mercury 40a, 69
Microsoft Corp. C2, 22, 48
MRO Software Inc. 35
Novell Inc. 29
Primavera Systems Inc. (regional) ...85
Protiviti Inc. 31
RightNow Technologies Inc. 39
SAP 43
Sterling Commerce 59
SunGard Availability Services 81
Sybase 9
Tata Consultancy Services Ltd. 79

CIO CONTACT INFORMATION

Editorial, Advertising and Business Offices: CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, MA 01701-9208, 508 872-0080.

CIO (ISSN 0894-9301) is published semimonthly and as a combined issue Dec. 15/Jan. 1 by CXO Media Inc. Periodicals postage paid at Framingham, MA, and at additional mailing offices. Canada Publications Mail Agreement Number 1902075. CANADIAN POSTMASTER: Please return undeliverable copy to P.O. Box 1632, Windsor, ON N9A 7C9.

Permissions: Copyright 2006 by CXO Media Inc. All rights reserved. Reproduction of material appearing in *CIO* is forbidden without written permission. Send all requests to Yadira Pizarro, PARS International, 212 221-9595, Ext. 231, or *yadira@parsintl.com*.

Photocopy Rights: Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by *CIO* for users through the Copyright Clearance Center, provided that the base fee of $3 per copy of the article, plus $.50 per page is paid directly to Copyright Clearance Center, 27 Congress Street, Salem, MA 01970. Please specify: ISSN 0894-9301. Permission to photocopy does not extend to contributed articles followed by this symbol: ‡.

Subscriptions: *CIO* is free to qualified information executives. To apply, use our online subscription form at *www.subscribe.cio.com*. Subscriptions are also available on a paid basis at a rate of $95 for the United States and Canada, $195 International (payable in U.S. funds only) and may be ordered online at *www.subscribe.cio.com/services.html*. Or address inquiries to *CIO*, P.O. Box 489, Northbrook, IL 60065-0489; 866 354-1125. Please allow four to six weeks for a new subscription to begin. The single copy price is $9 for the United States and Canada, and $15 International. Prepayment is required, payable in U.S. funds.

Change of Address: Please go to *www.omeda.com/custsrv/cio* and follow the online instructions.

Postmaster: Send change of address to *CIO*, P.O. Box 489, Northbrook, IL 60065-9816. Printed in the U.S.A.

When it came to their AV design and installation,

Case Study: H. Lee Moffitt Cancer Center and Research Institute Auditorium

H. Lee Moffitt Cancer Center could have worked with anyone.

They chose us.

Audio Visual Innovations

Audio Visual Innovations recently helped H. Lee Moffitt Cancer Center and Research Institute with their new facility, and we can help you, too. Working closely with architects, designers, facilities managers and both IT and construction professionals, AVI designs, builds and installs world-class audiovisual environments for all forms of presentation, communication and collaboration.

From boardrooms, classrooms and courtrooms to auditoriums, healthcare and mission-critical monitoring facilities, AVI's extensive project and client list reflects the breadth and depth of our expertise and experience.

In business since 1979, AVI is America's premier AV system design and integration company, fielding multiple teams of experts that include engineers, project managers, CAD technicians and other construction and audiovisual industry professionals. AVI is a national company. Our size and strength give us unrivaled access to the widest range of products, all the latest technologies, and a level of purchasing power that ensures substantial value for all of our customers.

Whether you're creating a new facility or upgrading an existing one, let Audio Visual Innovations design and install the technology solution that will project the best possible image for your organization. For more information, including additional case studies, please visit our website, **www.aviinc.com**. To discuss your specific needs with an AVI representative, give us a call at **1-866-634-7265**.

Audio Visual Innovations

Your Source For Being Seen And Heard.

DESIGN • BUILD • INSTALL | 1-866-634-7265 • www.aviinc.com

endlines

BY SCOTT BERINATO

POP QUIZ FOR CONCERNED POLLUTERS

Dirty, Hungry IT

1. According to Harvard's Campus Energy Reduction Program, how many metric tons of CO^2 do 1,000 desktop computers left on for one year emit into the atmosphere?

a. Less than one
b. 6.8
c. 68
d. 680

2. How many 2006 4WD Ford Expedition SUVs driving an average distance per year would it take to emit the same amount of CO^2?

a. 63
b. 185
c. 496
d. 1,100

3. About how many trees would it take to offset those emissions?

a. 3,000
b. 30,000
c. 300,000
d. More than 500,000

4. The electric bill for running 1,000 personal computers for one year would amount to how much?

a. $115,000
b. $35,000
c. $15,000
d. $9,500

5. TRUE OR FALSE: Computers use up more energy turning on and off than they would if you just kept them running for several hours.

MATCH the application to the percentage of U.S. electricity consumption that it accounts for:

6. Computing
7. Motor drives
8. Lighting
9. Other

a. 50
b. 20
c. 15
d. 15

10. According to Lawrence Berkeley National Laboratory, office equipment consumes what percentage of all electricity used in the United States?

a. <1
b. 3
c. 12
d. 25

11. TRUE OR FALSE: One average-size power plant could have supplied all the energy consumed by U.S. data centers in the year 2000.

MATCH each energy-saving technique below to the unintended negative consequence it creates:

12. Switching from CRT to flat-panel LCD monitors

13. Consolidating servers into fewer, higher-powered machines

14. Purchasing a laptop instead of a desktop

a. Significantly increases power consumption
b. Creates millions of tons of toxic waste
c. None

BONUS QUESTION: According to Mark Twain, what is a "person without energy"?

SCORECARD

0-5 correct
Low voltage

6-10 correct
Sustainable power

11-15 correct
Circuit breaker!

ANSWERS: **1.** d **2.** a **3.** c **4.** a **5.** False: According to the Department of Energy, "Turning computers on and off uses the same amount of energy as about two seconds of being on." **6.** c or d **7.** a **8.** b **9.** c or d **10.** b **11.** False: According to Lawrence Berkeley National Laboratory, data centers consumed about 500 MW of power in 2000. The average power plant, according to the Union of Concerned Scientists, generates about 213 MW. So it would require about three average power plants. **12.** b: Nine pounds or more of lead waste is created with each CRT discarded. **13.** a: Higher-powered computers run hotter and require significantly more cooling power from HVAC systems. **14.** c **BONUS:** "Nothing. Nothing at all."

ILLUSTRATION BY HARRY CAMPBELL

IBM

_INFRASTRUCTURE LOG

_DAY 16: It's out of control. It takes people forever to access...everything. Nobody can get anything done. We're so inefficient. There's got to be a better way.

_DAY 17: Gil says he's found one: aerodynamic bodysuits. He says everyone will be able to work faster and better now.

_DAY 21: I've taken back control with IBM WebSphere Portal. It seamlessly integrates our apps, processes and info. People have what they need to be more effective. Now we have a customizable interface that puts everything at our fingertips.

_Productivity is up. Gil says that's great, but he refuses to take off his suit.

WebSphere. Portal

Download IBM's WebSphere Portal ROI Tool at:
IBM.COM/**TAKEBACKCONTROL**/PORTAL

IBM, the IBM logo and WebSphere are registered trademarks of International Business Machines Corporation in the United States and/or other countries. ©2006 IBM Corporation. All rights reserved.

IBM

_INFRASTRUCTURE LOG

_DAY 35: Whoa! Came in today and found a black hole. Information goes in but doesn't come out. This is bad.

_DAY 36: The black hole just sucked in three interns. HR is not pleased.

_DAY 38: I've taken back control with IBM Information Management middleware. It's built on open standards. Totally scalable. Seamlessly unites all our critical information, whatever its source. Now our info has real business value, and we can use it in innovative ways to help spur growth.

_We got everything back from the black hole. Except the interns.

Information Management

See innovative IBM Info Management solutions in action:
IBM.COM/**TAKEBACKCONTROL**/INFOMGMT

IBM and the IBM logo are registered trademarks of international Business Machines Corporation in the United States and/or other countries. ©2006 IBM Corporation. All rights reserved.

_INFRASTRUCTURE LOG

_DAY 49: Things are out of control. Our system is just not secure, flexible or reliable enough. Gil bought some "infrastructure bloodhounds" online. He says they can sniff out any problem.

_DAY 50: They can't. But IBM Tivoli Express middleware can. It's a series of I.T. management solutions designed and priced for mid-sized businesses. Secure, boosts uptime, and protects our data with automated backups. We even got help customizing and implementing it.

_DAY 52: Remind Gil: Bloodhounds not as good at sniffing out problems as they are at chewing Ethernet cables.

IBM®

Tivoli. Express

Get the Guide to simple, fast, secure I.T. Management at:
IBM.COM/**TAKEBACKCONTROL**/SIMPLE

IBM, the IBM logo, Tivoli and Express Middleware are registered trademarks of International Business Machines Corporation in the United States and/or other countries. ©2003 IBM Corporation. All rights reserv